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EDITORIAL

Railway Age

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At a recent meeting of the Institution of Locomotive Engineers (England), H. N. Gresley of the Great Northern

Alloy Steels for Locomotives

Railway of England, pointed out the advantages of the chrome nickel steel used for the side rods and valve gear parts of locomotives which he recently designed. The advantages of this material apply particularly to locomotive main rods. These rods are subject to buckling either in a vertical or lateral direction, but by using the alloy steel the weight of the rod can be reduced without impairing its strength. The rod is also subjected to stress due to its own inertia when the engine is running at high speed. The inertia sets up alternately reversed stresses in the top and bottom flanges of the rod and if the steel can be made stronger it has a further advantage, as the lightening of the rod reduces these stresses. The use of alloy steel is advantageous under conditions existing in Great Britain. It is almost compulsory on American locomotives if satisfactory results as regards counterbalancing and track stresses are to be secured. Railroads that want to get the best in modern motive power should not fail to consider alloy steels when preparing locomotive specifications.

Glenn E. Plumb, in a recent open letter to President Markham of the Illinois Central, has afforded another fine example of the misrepresentation of the

Loss and Damage Claims and Rebating

railways which prevails in the labor union propaganda against private management. He charges that the railways are violating the law by giving rebates to favored shippers. He alleges as evidence in support of his charge that payments for loss and damage of freight increased from \$22,000,000 in 1910 to \$122,000,000 in 1920. No more preposterous misrepresentation or one worse adapted to serve as evidence in support of his charge could have been made. In 1913 the loss and damage claims paid amounted to \$22,738,893. In 1917, the last year before the government operation, they had increased to \$34,079,757. In 1919, the second year of government operation, they were \$104,507,174. Plumb frankly says that his entire attack is upon private ownership and management, but these figures show an increase of over 200 per cent in two years in loss and damage claims paid under government management. Of course, he ignores this increase under government management entirely. He has only interpretation of the facts which would show that more than three times as much rebates were paid in the form of loss and damage claims under government operation than two years before under private operation. Instead, therefore, of citing the figures for 1919 he cites those of 1920, and exaggerates them. The total freight loss and damage payments in 1920 were \$120,939,903. But these figures do not indicate an increase of rebating under either government or private operation. There was during these years an increase in the total freight handled. There was a very large increase in the prices of commodities. If there had been no increase whatever in the amount of freight lost and damaged there would necessarily have been an increase in payments for loss and damage due merely to

the increase in the value of the freight lost and damaged. Plumb's efforts to prove an increase in rebating by the increase in payments for loss and damage of freight helps to show what the *Railway Age* repeatedly has charged, namely, that there is almost no form of misrepresentation or falsification to which the advocates of the Plumb plan will not resort in their efforts to discredit private management of railways.

As a result of the conferences between officers of the four train service brotherhoods and railway executives in Wash-

Territorial Conference Committees

ington, held under the sponsorship of Secretary Hoover, the Association of Railway Executives has announced that conference committees will be formed in the Eastern, Southern and Western territories to meet with representatives of the brotherhoods "in a fair effort to compose and adjust all points at issue." These conferences which the Association of Railway Executives has gone on record as favoring should not be confused with the regional boards of adjustment, upon which the association took no action as a whole. These regional boards were set up by only those carriers which approved of them. The regional boards are restricted to the consideration of individual grievances. The territorial conferences will not take up such matters, but will deal with general disputes such as wages and working conditions. In the case of the conferences, however, as with the regional boards, no road need become a party unless it so desires. Both of these movements, that for the regional boards and that for the territorial conferences, are in the nature of experiments, but both have the laudable purpose of settling points of difference without taking them before the Labor Board. There is a distinction between the nature and purposes of the two, however, which should not be overlooked.

During the past few years many important developments and practical applications have been made in the field of

Wireless Railroad Communication

wireless telegraphy and telephony. Therefore, it is of interest to note that the Nashville, Chattanooga & St. Louis has recently installed wireless stations at Tullahoma, Tenn., and Guntersville, Ala., and is now awaiting a government license before inaugurating regular day and night message service. These two stations were selected for the first installation on the N. C. & St. L. on account of the difficulty of building land line communications because of the waterways, it being estimated that a pole line between the two points would cost \$25,000 as compared with \$2,000 for radio equipment. It is now proposed to follow this installation by others between the general office in Nashville, Tenn., and the various division headquarters. Almost all railroads have been inconvenienced because of important inter-office circuits being out of service when pole lines were torn down by wind, sleet or floods. The increased mileage of a circuit adds to the chances for trouble, whereas the limits of wireless apparatus depend primarily on the power of the sending equipment.

There are, therefore, numerous conditions on the railroads under which wireless communication might well produce economies and supply more reliable service. For this reason it would seem advisable that the railroads should keep informed as to the progress in wireless communication on the N. C. & S. L.

With its eighteenth annual meeting completed, as recorded elsewhere in this issue, the American Wood-Preservers' Association is well along in the second decade of its career. The paper by A. F. Robinson recording the results secured by the Atchison, Topeka & Santa Fe System, after more than 20 years' experience in the construction of creosoted trestles with ballasted decks, also serves to show how well established is the treatment of timber. There is ample evidence that money thus expended has paid satisfactory returns in decreased annual cost of the structures protected. However, as in the case of cross ties, there is an utter lack of uniformity in the application of these methods by the railroads throughout the country. Preservative processes as applied particularly to bridges, have had their greatest application in the south where climatic conditions are unusually favorable for decay and where timber may begin to rot before it can be hauled out of the woods. In such an environment the introduction of timber treatment is particularly favorable—the beneficial results are especially tangible. The fact that conditions in the northern states are not so conducive to decay serves to explain, but does not necessarily justify, the failure of many of the northern roads to avail themselves of the advantages that would accrue from applying creosote or other preservative processes to their wooden structures. Yet, it is a fact that a great many of the roads have made little or no use of these treatments. On some roads a consistent policy toward progressive elimination of all timber bridges makes the subject of less importance. On others, an extreme restriction of funds precludes the use of anything but the very cheapest of structures. But in spite of the variation in conditions, there would appear to be an unwarranted disparity of practice and until this has been overcome the railroads cannot be said to have derived the full benefit to be gained from the work of such technical organizations as the American Wood-Preservers' Association.

Railways and Train Service Employees

IN ACCORDANCE with a resolution adopted by the Association of Railway Executives on October 14 the various railroads have been holding conferences with all their employees preliminary to hearings before the Railroad Labor Board on the question of a further general reduction of wages. Secretary Hoover has started a movement which makes it possible that the question of reduction of the wages of employees engaged in the operation of trains will be settled without hearings by the Labor Board.

Secretary Hoover, acting evidently with the backing of the Harding administration, brought about informal conferences between the heads of the four principal train service brotherhoods and a number of railway executives. The result on the railways' side was a meeting of the Association of Railway Executives in Chicago on January 21 at which an important resolution was adopted. This provides that conference committees representing the railways in the eastern, southeastern and western territories, respectively, shall be constituted and authorized to meet with the four train and engine service brotherhoods "in a fair effort to compose and adjust all points now at issue, no restrictions to be imposed upon the

consideration of any and all questions of wages and rules governing working conditions." The resolution expressly states that any individual railways that prefer to do so shall carry on negotiations with their own employees rather than participate in the territorial negotiations. If agreements are not reached the differences left unsettled must, of course, be brought before the Labor Board.

One may or may not believe that these direct negotiations between groups of railways in the various territories and the train service brotherhoods are likely to result in satisfactory settlements. It is merely summarizing recent history to say it has been a very long time since direct negotiations between the train service brotherhoods and the railways resulted in anything except disagreements which were followed by threats of strikes and finally by arbitration of one kind or another, or by legislation such as the Adamson Act. On the other hand, it is clearly desirable that amicable settlements of questions affecting wages and working conditions shall be attained by direct negotiations if possible. Furthermore, their attainment in this way, if possible, is in strict accordance with the spirit and the specific provisions of the Transportation Act. No proceeding involving wages or working conditions can legally be brought before the Labor Board until the matters in controversy have been made the subject of direct negotiations and have resulted in a disagreement.

From the standpoint of both the railways and the train service employees an amicable settlement of all their differences regarding wages and working conditions would be most desirable. The train service employees, as the *Railway Age* repeatedly has pointed out, are almost the only employees who are peculiarly railroad men, and the only ones a strike by whom would immediately result in an interruption of transportation. Therefore, these employees are peculiarly charged with a duty to the public, and at the same time it is of peculiar importance to the public to prevent strikes by them. It should be easier at present for the railways to effect an amicable settlement with them than with almost any other class of employee. As the *Railway Age* said in an editorial in its issue of October 29, 1921, in discussing how railway wages should be readjusted, "full consideration should be given to the fact that the advances in wages which have been received by the employees in train service have been relatively less than the advances which have been given to many other classes of employees." The very fact that this has been true necessarily dictates that the railways should ask relatively smaller reductions in the wages of these employees than in those of most other classes. Since the railways are bound to ask them to give up relatively less than other employees it should be easier to get the train service employees voluntarily to give up whatever they reasonably should.

There is an almost universal demand for reductions of freight rates. The railways have promised to try to secure further reductions of wages and to give the public the full benefit of them in reductions of rates. The railways and the leaders of the train service brotherhoods, in entering the negotiations, must both of them recognize this public sentiment regarding rates and bear in mind the promise the railways have made to the public relative to reductions of wages and reductions of rates. While the train service employees cannot reasonably be asked to accept as large reductions of their compensation as most other classes of employees, the negotiations would be rendered futile, if the labor leaders should enter them with a determination to make no concessions which would cost the employees anything, or effect any real reduction in railway expenses. There are involved not only the questions of wages but those of punitive rules and of time and one-half for overtime in freight service. The present wages of at least two classes of train service employees, firemen and brakemen, are too high compared with those of engineers and conductors and compared with

the present cost of living. Time and one-half for overtime in freight service is economically unsound. No settlement which the railways themselves can defend before the bar of public opinion can be reached unless both sides enter the negotiations with a disposition to be fair and to consider the public interest as well as their own.

Can Railways Earn a Fair Return?

WE PUBLISH elsewhere in this issue an article by the distinguished railway economist, Sir William Acworth, discussing the question "Can the Railways Earn a Fair Return"? The conclusion he apparently reaches is somewhat startling. Surveying conditions throughout the world, he seemingly decides that under these conditions railways cannot in most countries charge, or will not be permitted by the public to charge, rates sufficient to make them self-sustaining. Whether under government or private operation, they are in practically all countries failing to earn a net return sufficient to pay interest on the investment in them. He seemingly believes this will continue to be the case and that the deficits, if paid at all, must be paid from public taxation.

Everybody who is informed regarding world railway conditions knows that, as stated by Sir William Acworth, almost without exception railways owned and operated by governments are incurring huge deficits. These deficits are, and of course must be, paid from taxes. Most privately owned and operated railways also have been incurring recently the equivalent of deficits, since they have been failing to earn sufficient net returns to pay even the interest rates that prevailed before the war upon their total investment. The total fixed charges of the Class I railways of the United States, including interest and rentals of leased property, are now about \$640,000,000 a year. Their net dividends in 1920 were \$271,500,000. This added to the fixed charges makes a total of \$911,500,000. Their net operating income in 1921 is estimated at \$616,000,000, or almost \$300,000,000 less than their present fixed charges and their dividends of last year. The loss incurred under private ownership and operation falls, where there are no government guarantees, as is now the case in the United States, upon private investors.

The important question is whether the losses from railway operation being incurred under both government and private management are to be perpetuated or are temporary; and if they are to be perpetuated whether they are unavoidable or due to governmental policy. Sir William Acworth makes some statements from which the conclusion might be drawn that he thinks they are unavoidable in many countries, and will continue to be incurred because traffic cannot bear rates high enough to pay all railway expenses and an adequate return upon railway investment. He clearly recognizes the fact, however, that in the long run if railway service is to be continued, whether under government or private ownership, all the expenses and an adequate return upon the investment must be paid. Hence his apparent conclusion that in future in most or all countries the cost of railway service must be partly paid from taxes.

The growth of railways throughout the world during the last century has been due to the fact that they have been able to carry goods and passengers by land cheaper in proportion to the quality of the service rendered than any other agency. Has this ceased to be true? There is no evidence to support the view that it has. Motor vehicles operating over highways provided by public taxation recently have become active competitors of the railways for longer and longer hauls. If, however, the total cost of motor transportation, including interest on the investment in and the expense of

maintaining the highways, were made the basis for the rates charged for motor transportation it never could compete with railway transportation except for very short distances. Insofar as motor transportation has succeeded in competing with railway transportation in this country for considerable distances, it has been due to the policy of the governments of virtually subsidizing it by allowing commercial vehicles to use highways built by the public without making any adequate charge for their use of the highways.

Whatever may be true in England where the railways have to meet water as well as motor competition on almost every hand, it is demonstrable that, in the United States, it is wholly unnecessary, except temporarily, to operate the railways at a loss and then pay the deficit in taxes. The traffic handled by our Class I railways in the year ended September 30, 1921, was almost the same as in the year ended June 30, 1916. In these five years the total earnings increased about 75 per cent. This indicates how large were the total advances in rates meantime. The much lower rates charged in 1916 yielded the railway companies a net return of \$985,000,000, or 5.9 per cent. The traffic had no difficulty whatever in standing rates at that time which yielded that much net return. The increase in traffic that year was the largest ever known. In the year ended September 30, 1921, the net return earned was only \$542,400,000, or 2.75 per cent on the property investment, and yet in that year there was an enormous decline of traffic and loud outcries that the rates were higher than the traffic could bear. The net return in 1916 was one-third of the total earnings. If it had been as large in 1921 as it was in 1916 it would have been only one-sixth of the total earnings, and being what it actually was it was only one-tenth of them.

It is clearly evident that if in 1921 the rates had been as much higher than they were, as would have been necessary to have given the companies a net return twice as large as they received the difference in the rates would have had practically no effect upon the amount of traffic moved. The main things that made necessary the advances in rates were an increase between 1916 and 1921 of \$2,200,000,000, or 127 percent, in operating expenses, and an increase from \$146,000,000 to \$286,000,000, or 94 percent, in railway taxes. The real question seems to be not whether the traffic can stand rates that will yield a fair return, but whether it can stand rates high enough to pay such enormous increases in expenses and taxes. In this connection, it will be noted that the taxes paid by the railways of the United States from their earnings in 1921 were almost exactly equal to the amount by which they failed to earn their fixed charges and dividends equal to those of 1920. If they must be subsidized, why not do it by the simple process of exempting them from taxation instead of first collecting taxes from them, and then paying part or all of their deficits from the taxes collected?

There is no serious difficulty in the United States in the way of fixing railway rates which the traffic can easily bear and which at the same time will yield an adequate net return to the companies, except a system of government regulation which is predicated mainly upon an entirely false economic principle. As a result of enormous exaggeration of the extent to which the amount of the rates charged is determined by the efforts of the companies to make profits our whole system of regulation is predicated mainly upon the principle that the way to secure reasonable rates is narrowly to limit the net returns earned. The inevitable tendency of the extreme application of this theory is to increase rather than to reduce the rates the railways must be allowed to charge. All the large economies in operation have been obtained through investments of capital in improvements of plant having the sole and specific purpose of reducing expenses. The policy of regulation followed for fifteen years has steadily reduced the amount of new capital invested in

economy-producing improvements and has therefore directly tended to maintain and increase operating expenses, thus putting upon those who pay transportation rates a much heavier burden that would have been put upon them if reasonable net returns had been allowed to be earned.

Perhaps Sir William Acworth, for whose opinions we have great respect, would answer that it makes no real difference, if the net return is adequate, whether it is derived from freight rates or taxes. But no responsible American railroad management would ever, so long as the railways are privately owned and operated, rely upon government appropriations to make up railway deficits. Very recent experience with government guarantees is all the experience of that kind that the railways of this country ever want. Government ownership and operation would be far preferable in this country to a policy of regulation and management under which the rates were deliberately and for a long period so fixed that they would not yield the companies a reasonable net return. Under the former policy the government would have to pay the deficits and there might be adequate development of railways. Under private management nothing could be surer than that unless the companies are allowed to get adequate net returns out of their rates and earnings they will never get them at all, and that there will not be adequate development of the railways.

How Freight Shipments Increased and Decreased

COMPLETE STATISTICS regarding freight car loadings in 1921 are very interesting because they show just what increases and decreases occurred in the shipments of the various classes of commodities during the year. Many people will be surprised by a reference to "increases" in shipments. Most people think that shipments of all kinds declined. This, however, is not true. The total freight business of the railways declined more than in any other year in history, but this decline in total business was accompanied by some remarkable increases in the movement of certain classes of commodities.

Relatively the greatest decline of shipments was in ore shipments, which decreased from 2,413,893 carloads in 1920 to 904,513 in 1921, or 63 per cent. This largely accounts for the extent to which the earnings of some roads handling a large amount of this business, such as the Great Northern and the Chicago & North Western, have suffered.

The decline of coal business had the greatest absolute effect upon the total traffic moved. The coal business fell from 10,082,450 carloads in 1920 to 7,934,048 carloads in 1921, or over 21 per cent. The decline in the coal business accounts for more than one-third of the total reduction in carloadings.

The number of carloads of forest products shipped declined from 3,056,923 in 1920 to 2,483,079 in 1921, or 18.7 per cent. Shipments of miscellaneous commodities declined from 16,503,179 carloads to 12,957,857, or 21½ per cent. The decline in shipments of livestock was small—¾ per cent.

There were two remarkable increases in shipments. The first was in grain and grain products, the shipments of which in 1921 amounted to 2,281,852 carloads as compared with 1,843,018 in 1920, an increase of 24 per cent. In absolute amount the increase in less than carload merchandise shipments was the largest. In 1920 they amounted to 9,017,074 carloads, while in 1921 they amounted to 10,677,226, an increase of 18.4 per cent. This very large increase in less than carload shipments unquestionably was due to the fact that many concerns which in 1920, when business was good, shipped in carload quantities, found it convenient in 1921, when business was poor, to ship in less than carload lots.

The foregoing statistics not only show clearly the classes of commodities in which the largest decreases of shipments took place, but also plainly suggest a conclusion as to why they took place. The increases occurred in the shipments of grain and grain products, all of which are food-stuffs, and in merchandise, which consists very largely of commodities daily used and consumed in ordinary living. On the other hand, the greatest declines in shipments which occurred were in the cases of basic commodities—coal, lumber, ore, etc.—and undoubtedly were due to the general stoppage of the enlargement of the physical plant of industry and the general depression in the manufacture of things largely used in the development of this physical plant. There are persons who attribute the decline in freight movement largely to the advances in rates. They will find it difficult to get any support for this view in the figures showing the actual increases and decreases in the amount of the various commodities shipped.

New Books

Railway Signaling. By E. E. King, professor of railway civil engineering, University of Illinois, Urbana, Ill. 371 pages. 349 illustrations and 13 plates. 6 in. by 9 in. Bound in cloth. Published by the McGraw-Hill Book Co., New York.

This is a work which will be widely welcomed. It gathers into one book a great variety of facts concerning signaling, and especially signal apparatus, which hitherto have been accessible only in scattered places—the Signal Dictionary, the files of the *Railway Signal Engineer* and the catalogs of the signal manufacturers. The author has done his work with careful fidelity. It is a systematic treatise; but to many readers a large part of the material will be rather unattractive because it is too much like a text-book—facts packed together in such solid fashion that considerable study or reflection will be required to get at the whole meaning. A comprehensive book on signaling has been waited for by many persons—railroad men and others—who have not the time or ambition to do much studying.

This book is, frankly, made up largely from material supplied by the signal manufacturers; and the records of the Signal Section of the American Railway Association have also been drawn upon. Some of this material is quoted without any clear explanation of whether the Association is responsible, or it is only an expression of a committee.

The book consists of 16 chapters and three appendices. It opens with a brief outline of the development of signaling. It is primarily devoted to the description and uses of the different classes of apparatus employed in block and interlocking signaling, but does not enter into engineering features to any extent. For example, under the head of track circuit, no mention is made of the effect of rail and ballast resistance on efficient track operation. No mention is made of the development of the welded rail bond in steam railroad practice. In some cases too much space has been devoted to apparatus which, while still in use, is fast becoming obsolete.

A chapter might well have been devoted to later developments, such as remote control of outlying switches. Automatic train control receives only a single paragraph.

As already intimated, this book "fills a long felt want"; but this want is felt largely by a class of readers who, when they get hold of the book, will swallow it whole. This is the reason for mentioning these criticisms. To the practical signal man, these and other faults will not appear very large. He will in most cases note them and soon lose sight of them, because of their relative unimportance as compared with the great mass of useful information to be found in the book.

The language is simple and non-technical and the hundreds of illustrations appear to have been selected, from the thousands available, with excellent judgment.

Can the Railroads Earn a Fair Return?

If Rates Will Not Yield a Reasonable Revenue, the Balance
Should Be Made Up by Taxation

By Sir William M. Acworth

LONDON, England.

THE GREAT WAR has changed everything, not only objective conditions but mental attitudes. For one thing, it has brought into prominence a fundamental difference, which even students of transport questions have not hitherto appreciated, between ordinary commercial undertakings and public utility companies. There can be few trading or manufacturing companies which have not at some period, either during or since the war, made exceptionally large profits. Even the shipping trades, which from many points of view are analogous to railroads, had several years of unprecedented prosperity.

On the other hand, railroads and street railways, and—in England at least, for I cannot speak from personal knowledge of other countries—gas and electric supply companies have a record of continuous adversity. The bulk of the railroads on the Continent of Europe are at the present moment not earning their operating charges. Even in England and in the United States, where things are somewhat better, their condition is precarious. Experience has shown that public utilities cannot adjust their charges to their expenses in times of emergency. Further, it has become not unreasonable to question whether the pre-war situation, when it was taken for granted that railroad corporations as a whole could and would earn at least a living wage, has not passed away forever.

Present Scale of Rates Excessive

Your Congress at Washington and our Parliament at Westminster have passed laws very much to the same effect. Congress has enacted that the Interstate Commerce Commission shall fix such rates as will with efficient and economical management produce a net return of $5\frac{1}{2}$ per cent or 6 per cent on the value of railroad property devoted to public service. Here in England, where there has never been any question of "water," and where before the war gross and net revenues hardly varied from year to year, the law says that railway rates shall be so fixed as to produce the pre-war net income, which is to be regarded as the new standard net revenue. But the rates that have been fixed so far have completely failed in both countries to provide the required result; and it is already evident that, if the existing rates have failed to produce it, it will not be produced by raising these rates still higher. And this for two reasons. Not only will public pressure prevent rates being still further raised, but railway men themselves in both countries admit that the present scale is excessive, that it is in some cases at least throttling trade; and that increased net revenue is more likely to be obtained by judicious reductions than by further increases.

At this point the difference between the situation in the two countries should be noted. Speaking broadly, our railway system is complete. With the exception of urban and suburban passenger lines, of which there will be more to say presently, we are not likely to build new railways, nor to need to purchase additional equipment. The result of the great amalgamations now to take place is indeed likely to be that we shall find too many miles of track and too many locomotives and cars, rather than too few. Electrification is the only direction in which, with us, much capital expenditure seems likely to be required. Such comparatively small sums as may be needed can in case of necessity be found by issuing

prior charge stocks; for with us the debenture debt is at present less than 30 per cent of the total capital.

The United States is in a very different position. Much new capital expenditure is imperative at this moment, and will be required annually for many years to come. It is obvious that from their own resources the railroads cannot raise it, unless they have a prospect of a reasonable commercial return, which no one is likely to put at a lower figure than $5\frac{1}{2}$ per cent.

But apart from this difference, which is not fundamental, the situation in the two countries is substantially the same. The public have at least learned one lesson from the war, that railroads are essential, that they must be adequate for the service that they are called on to render, and that, if they are inadequate, the public suffers. We seem then to have reached this conclusion, that railway revenues are inadequate; that somehow they must be made adequate; but that this cannot be done by further increasing railway charges. And this brings us up against a reconsideration of first principles.

Should Railways Pay Their Own Way?

In England and in America we have hitherto taken it for granted that railroad corporations, like any other enterprise, must pay their own way; and very broadly, taking the rough with the smooth, they have done so, for there have been no subsidies to railway enterprise in Great Britain, and your land grants and state and municipal subscriptions to bonds are a flea-bite to the mass of private money invested in the United States railways. In the nature of things there was no reason why this should be so. Taking the world over, railways have not been expected to be self-supporting, at least in their development period. In almost every country in the world—Canada is a sufficiently conspicuous instance—public money has been spent to provide railroads, or public guarantees have been given on capital privately provided. And why not?

The provision of roads is universally accepted as a natural function of government. Normally the road, built wholly at public expense, is thrown open to free use by the community at large. For the use of particular roads tolls are sometimes charged, while in other cases license duties are levied on vehicles which use the road. But in no case do tolls and license duties cover anything like the total cost. Here in England, for instance, we have new and greatly increased taxation of motor vehicles. The taxes bring in £10,000,000 per annum. The cost of road maintenance is over £50,000,000. Does a road cease to be a road when it becomes a railroad; when its capacity for public service is increased ten-fold by laying steel rails on the top of it? And if not, why should the universal principle that the roads are provided for public use at public cost fail to apply?

I have been discussing the matter so far as one of principle. The working out of the principle in practice is another matter. For my own part, I see no great difficulty. We start from the point that Congress and Parliament have fixed the return which it is reasonable that the private investor should receive in both countries. There are expert tribunals whose business it is to fix such scales of rates as it is reasonable that the customer should pay. And no better definition of reasonableness can be found than the much-

abused phrase, "what the traffic can bear," remembering that this means, not the last ounce which can be squeezed out of the customer, but such a rate as will not check the growth of trade, the development of new industries, and the opening up of new districts. If rates and fares, reasonable when tried by this standard, will not yield such a revenue as will provide a reasonable return, not only on existing capital but new capital as it requires to be employed, then the balance, whatever it is, falls to be made up from general taxation.

Suggests a Subsidy

I fully expect that a suggestion of this kind will meet with serious opposition from railway men themselves. They will argue that, if public subsidy is given, greater public control will be enforced in return. I do not think the argument is sound. The theory both of the English and the American legislation is that the rate-fixing tribunal shall be satisfied that, as a condition of being permitted to earn the standard net revenue, the railway management shall be efficient and economical. And the inspection necessary to satisfy the tribunal that the management is in fact efficient and economical is precisely the same whether the desired revenue is postulated to be $5\frac{1}{2}$ per cent, or 4 per cent, or 3 per cent, or any other figure.

Before passing from this point, however, a query may perhaps be interposed as to how the criterion of efficiency and economy is to be applied in practice. The standard revenue is in the United States to be fixed either for the whole country or for a great territorial group as the commission may decide. So far they have decided to fix it by groups. What is to happen, if in any given group the commission is satisfied that the management of ten companies is efficient and economical, while the eleventh falls short? Is there to be a *pro rata* reduction of the permitted revenue of the whole group? This would seem a hardship upon the ten just managements which need no repentance.

The alternative, to forbid the ill-managed company to charge the same rates as its neighbor, is clearly impossible. For the limitation of the charges of the ill-managed company is in effect the limitation of the practical maxima of the well-managed ones so far as they are in competition. Even at points where they are not in competition, it seems to be impossible for any company to have different scales and rates in different parts of its territory, for this would be to penalize that portion where the ill-managed company does not compete.

In Great Britain, where the railways are to be grouped in four districts, mainly non-competitive, the theoretical difficulty is not so great. It will be possible in theory to have a higher scale of rates, at least for local and retail traffic, in one district of the country than in another. But in the long run this will be impossible for bulk traffic, for which railway rates are a serious item in production cost. Serious difficulties in pressure of railway rates must tell on the competitive industrial strength of the various districts, and may even in certain cases enforce the transference of great industries from one district to another, and so defeat the very object sought to be attained by the imposition of higher rates.

Metropolitan Rapid Transit

I have spoken hitherto of railways as a whole and have suggested what seems to me to be a tendency of the future, rather than proposed a measure which can be considered to be within the range of practical politics at the present moment. But when we consider, not main line railways, but the rapid transit undertakings of the great cities, the question is one of practical urgency. The population of Greater London and Greater New York continues to increase. Not only is it necessary to provide new accommodation for the increasing population, but it is an accepted rule that the greater the population the greater number of rides per head. Now it is

clear that on the present scale of fares no one can afford to build a new rapid transit line as a commercial proposition. It is equally clear, at least in London, that existing fares cannot be raised further: passengers disappear and the expected increase of revenue does not materialize.

On the other hand, it is essential in the interest of public health that the population shall be dispersed and the crowding at the centre lessened. And this can only be effected by rapid transit railways. If then rapid transit lines must be built, that portion of the cost which is not met by the fares paid will have to be provided from public taxation.

There is another point which perhaps applies more to London than to New York. Underground or overhead railways undoubtedly relieve street congestion. If the underground or overhead railways are not made, or if, owing to prohibitive rates they are not fully used, street congestion increases till street widenings become imperative. And these are most required precisely where land is most valuable, and therefore the cost highest. Now the entire cost of street widening is borne as a matter of course by local taxation. A given sum spent on a new railway, which can move many hundreds of passengers at a time, in trains succeeding each other at 90 seconds' interval, will do far more to relieve congested traffic than any conceivable street widening. In other words, a new underground street is not only more efficient, but more economical than a surface street; and further, whereas the community bears the entire cost of the provision of the surface street, to the cost of the sub-street it is only asked to contribute.

From every point of view, then, it seems reasonable to accept the general principle that urban rapid transit must be provided at the joint cost of the community and the actual users and for their joint benefit. And further, it would seem that, under the new conditions that have arisen, the old idea must be abandoned, according to which not only in New York but also in Paris the municipality has sought to obtain from the passenger fares—sometimes successfully, sometimes not—the full interest on the bonds which it has issued to meet construction cost.

Assuming the acceptance of the theory that it is right that new railroads should be provided in part out of the proceeds of taxation, there is clearly a distinction to be drawn between main lines and urban railroads. Main line subsidies must apparently be made out of national taxation. Not so in the case of cities. A city has a distinct common life and fixed boundaries, and the land within these boundaries is a definite area. Assuming that the urban railways are fairly distributed over the area, the whole of the land within the area is enhanced in value: Wall Street, because a larger population is brought to it from the outskirts, just as much as the Bronx, because the land there is made accessible for the residence of those who have business in Wall Street. It would seem to be not only equitable but reasonably practicable to impose a special land tax to meet some portion at least of the cost of construction of new urban railways.

A BILL TO COMPEL railroads to use steel passenger cars under certain conditions was introduced in the Senate on January 18 by Senator Harris of Georgia.

TRADES UNIONISM and the refusal of employees to do an honest day's work for an honest day's pay, constitute the most perplexing problem before the managers of the railways of Canada, according to Hon. F. B. Carvell, chairman of the Canadian Railway Commission, as recently quoted in the Quebec Chronicle. Examining the records of the inspection of an electric warning at a crossing of the Grand Trunk at Lachine he found that as high as 25 hours a month was spent in the inspection of this bell and its wiring. "The railways are in the hands of these labor unions," said Mr. Carvell. The railway, he thought, was spending more for the operation of the bell than it was worth.

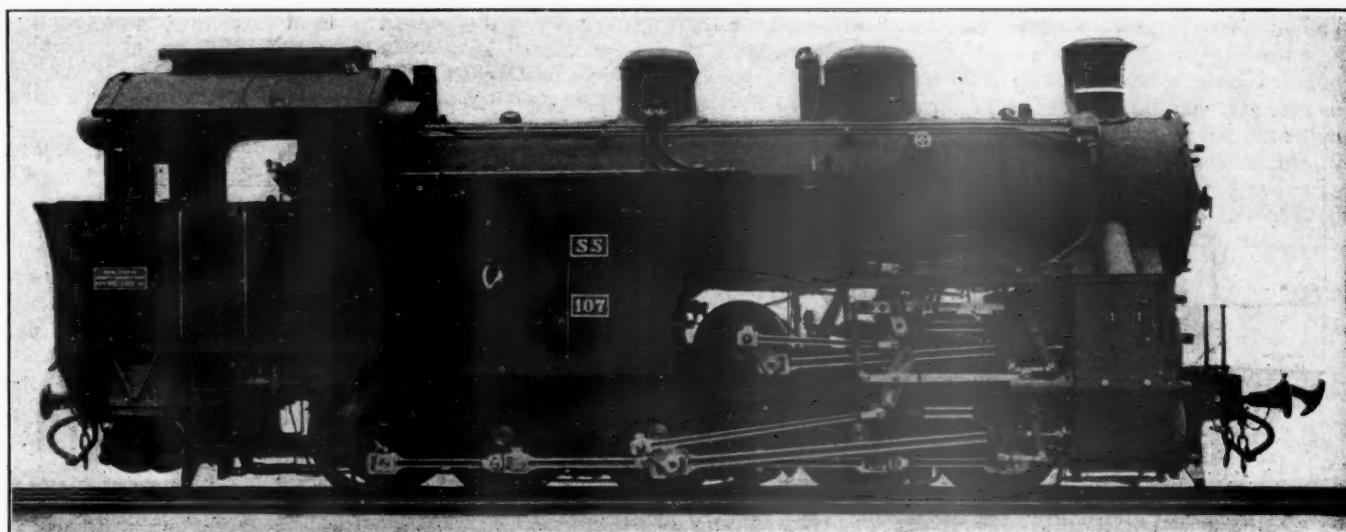


Fig. 1—Adhesion and Rack Locomotive of 0-10-2 Type.

Adhesion and Rack Locomotive for Sumatra

Interesting Design of 0-10-0 Type Superheater Four-Cylinder Compound Locomotive for Dutch State Railways

By S. Abt

THE DUTCH STATE Railways on the west coast of Sumatra operate about 152 miles of line of 3 ft. 6 in. gage with about 70 locomotives. From Padang, the terminal of this line, to Fort de Kock and to the coal fields of Ombilia there are some very heavy grades. Portions of this line are provided with a rack bar of the Riggenbach type. The



Fig. 2.—Train of 360 Tons on a Heavy Grade with Two 0-8-2 Type Locomotives

grades on the adhesion track vary from 0.6 per cent to a maximum of 2.3 per cent, and on the rack portion of the line from 5.1 per cent to 6.8 per cent, the total length of the rack line being 22.5 miles. The radius of the sharpest curves on this part of the line is about 500 ft.

Six types of locomotives have been built up to the present time for service on the mixed track. The first four designs were of the four-wheel coupled type and had simple cylinders. The sizes of these locomotives and the year in which they were delivered are shown in table No. 1:

TABLE NO. 1

| | | | | |
|----------------------------------|--------|--------|--------|--------|
| Year received..... | 1889 | 1892 | 1893 | 1894 |
| Type..... | 0-4-2 | 0-4-0 | 0-4-0 | 2-4-0 |
| Cylinder diameter, in..... | 13 3/4 | 17 | 17 | 17 |
| Cylinder stroke, in..... | 19 3/4 | 19 3/4 | 19 3/4 | 19 3/4 |
| Weight in working order, lb..... | 57,900 | 46,200 | 47,650 | 64,500 |
| Heating surfaces, sq. ft..... | 777 | 550 | 650 | 817 |
| Grate area, sq. ft..... | 15.2 | 9.6 | 14.3 | 13.8 |
| Boiler pressure, lb..... | 162 | 162 | 176 | 176 |

The bulk of these locomotives were constructed by the Esslingen Machine Works.

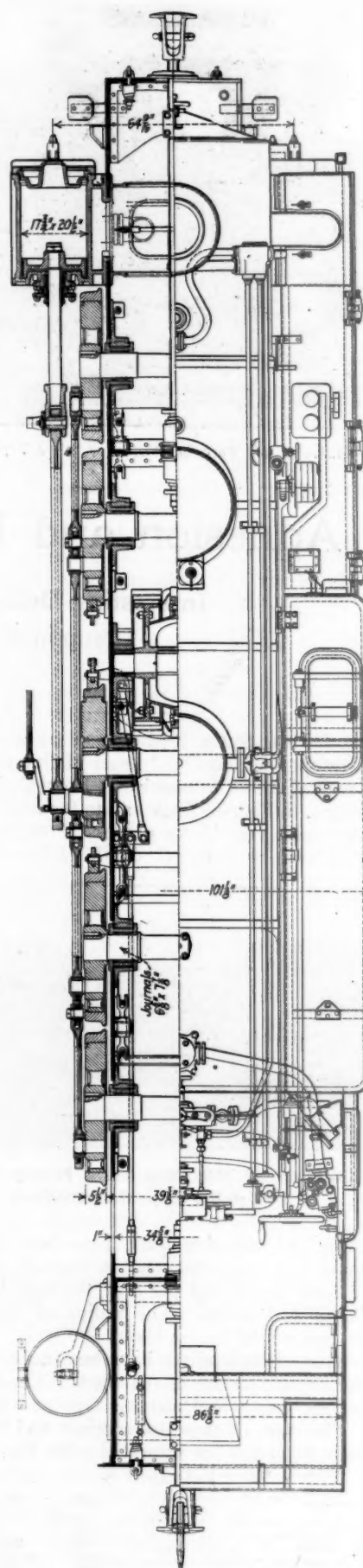
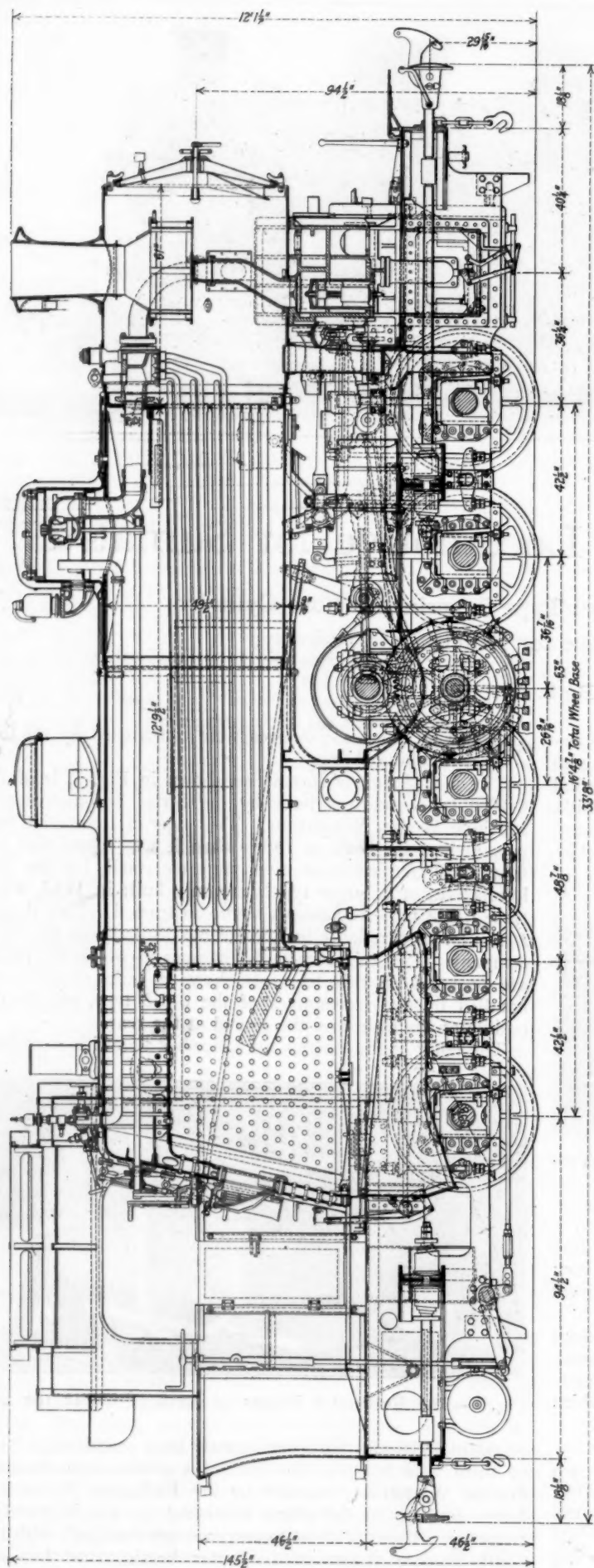
The new design of locomotive shown in Fig. 1, is of the 0-10-0 type and was built by the Swiss Locomotive and Machine Works, Winterthur. This type of locomotive was proposed as far back as 1906, when it was found that the four-wheel coupled locomotives were too small, but the first locomotives of a larger type were only built in 1912, when three 0-8-2 type locomotives were constructed. This design is similar to that built for the Brunig Railway by the same company. Fig. 2 illustrates the manner in which the trains are operated on this line. It shows a train of 360 tons handled by two locomotives of the 0-8-2 type, one in the middle of the train and the second at the rear.

The latest engines which are described herewith were pro-



Fig. 3—The Feedwater Heater Is Located Under the Cab

posed in 1916 and have but recently been completed. Nine of them were built by the Swiss Locomotive and Machine Works, Winterthur, and six by the Esslingen Works, the latter working to the plans furnished by the Winterthur company. Three of these locomotives are equipped with the Caille-Potonie system of feedwater heating and two are



Elevation and Plan of Adhesion and Rack Locomotive for Sumatra

equipped with the Titan dumping grate as used on the Hungarian State Railways. These engines will exert a maximum tractive effort of 14,000 kilograms (30,865 lb.); that is, they will handle a train of 200 metric tons on a 5.8 per cent grade.

The principal features of the new 0-10-0 type locomotive are shown in the drawings. The boiler is the same as that used on the 0-8-2 locomotive with the exception that it is provided with a Schmidt superheater. The barrel of the boiler consists of two courses, has an inside diameter of 1,230 mm. (48.5 in.) and contains 64 tubes, 3,900 mm. (12 ft. 9½ in.) long and 18 flues of the same length for the superheater elements. The tube and flue evaporating surface is 64.5 sq. m. (694 sq. ft.) and the superheater elements have

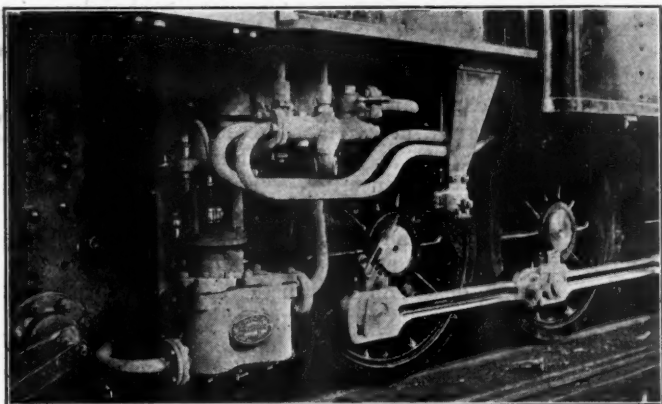


Fig. 4—Double-Acting Caille-Potonie Feedwater Pump

a heating surface of 30.8 sq. m. (331 sq. ft.). The firebox, which is made of copper, has a heating surface of 7.06 sq. m. (76 sq. ft.). The working pressure of the boiler is 14 atmospheres (205 lb. per sq. in.). The firebox has a grate area of 1.85 sq. m. (19.9 sq. ft.). The smoke box is provided with a hopper, operated by a lever on the right hand side of the engine, and is cleaned by a jet of hot water, as is also the ash pan. The two 3-in. safety valves, located on the back of the dome are of the Coale type. The boiler is insulated by white asbestos mattresses and sheet lagging.

The driving wheels are 1,000 mm. (39½ in.) in diameter. The leading and trailing drivers have a side play of 22 mm. (about ⅞ in.). The locomotive frame is suspended by laminated springs with equalizers between the fourth and fifth pair of drivers. The total wheel base is 5,000 mm. (16 ft. 4⅞ in.).

The rack-wheel is driven from a separate set of cylinders, located above the main cylinders, through a jack-shaft located across the top of the locomotive frame. On this jack-shaft is mounted a spur gear which meshes with a gear on the cog-wheel axle. The pitch diameter of the driving rack-wheel is 975 mm. (38⅜ in.). The gearing between the crank axle and the main cog-wheel axle has a ratio of 1 to 2.033. The gear teeth are of the helical type with a pitch angle of 23 deg.

As will be seen from the illustration, the locomotive is of the four cylinder compound Winterthur type with all four cylinders located outside the frames, two on each side. They are provided with piston valves operated by Walschaert valve gear and controlled by one screw reversing gear. The lower cylinders are the high-pressure cylinders and drive the five coupled adhesion axles. They are cast separately in order to facilitate removal and repairs. The upper or low-pressure cylinders drive the main cog-wheel as mentioned above. These are not placed in operation while the locomotive is running on the adhesion track.

The exhaust steam after leaving the high pressure cylinders passes direct to the exhaust pipe under ordinary condi-

tions. When it is desired to place the low-pressure cylinders, which operate the rack-wheel, into operation the engineer, by means of a steam operated valve, changes the flow of the exhaust steam from the high-pressure cylinders into the steam chest of the rack or low-pressure cylinders. From these cylinders it passes to the exhaust. In this way the

TABLE No. 2

| | |
|---------------------------------------|---------------------|
| Gage | 3 ft. 6 in. |
| Tractive effort..... | 30,865 lb. |
| Weight in working order..... | 114,600 lb. |
| Weight on driving wheels..... | 114,600 lb. |
| Wheel base, driving..... | 16 ft. 4⅞ in. |
| Driving wheels, diameter..... | 39½ in. |
| Cylinders, diameter and stroke..... | 17¼ in. by 20¼ in. |
| Valves..... | Piston |
| Boiler..... | Straight |
| Steam pressure..... | 205 lb. per sq. in. |
| Outside diameter of first ring..... | 50¼ in. |
| Tubes, number..... | 64 |
| Flues, number..... | 18 |
| Tubes and flues, length..... | 12 ft. 9½ in. |
| Heating surface, tubes and flues..... | 694 sq. ft. |
| Heating surface, firebox..... | 76 sq. ft. |
| Evaporated heating surface..... | 770 sq. ft. |
| Superheating surface..... | 331 sq. ft. |
| Grate area..... | 19.9 sq. ft. |

locomotive is propelled both by the five-coupled axles and the rack when ascending the rack grades. In order to ensure starting with a load on the rack portion of the line live steam can be admitted directly to the low-pressure or rack cylinders by means of a special valve, and for a time the

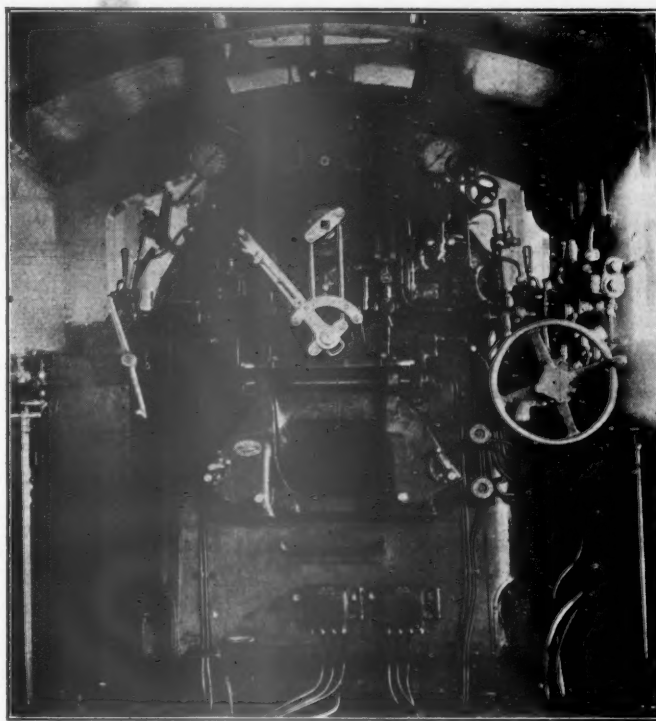


Fig. 5—Cab Arrangement of the Sumatra Adhesion-Rack Locomotive

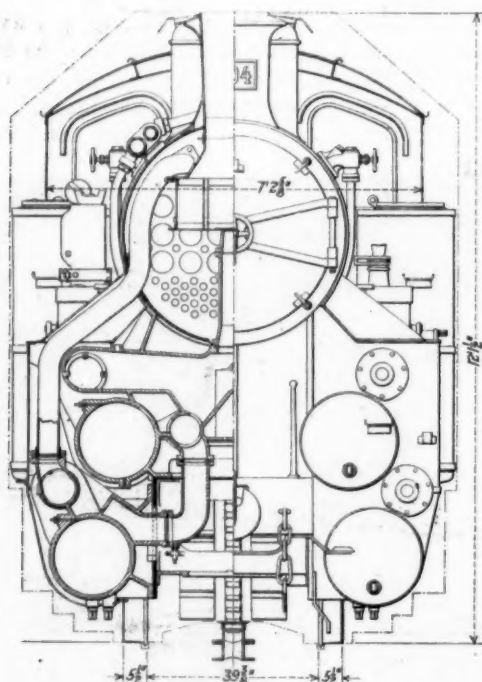
locomotive works as a twin engine. The four cylinders are of the same diameter and have the same stroke.

The locomotive is equipped with three kinds of brakes; an air counterpressure or repression brake is used in going down hill and acts on all four cylinders, or independently on either pair of them. For working this brake a valve is fitted under the smoke box which closes the passage from the cylinders to the exhaust and opens a passage to the atmosphere. By reversing the valve gear the cylinders draw in the air which is compressed, the discharge being made through a small pipe leading to a small perforated chamber at the top of the stack. In order to counteract the heat produced by compression, water is sprayed in the exhaust

passages of the cylinders, the resulting mixture being driven through the superheater into the header passing out through the discharge pipe mentioned above. By regulating the valve which controls the discharge of the compressed air the locomotive engineer is able to regulate the speed of the train. This is the ordinary way of braking a descending train under normal conditions.

Brake shoes are provided on the second, third and fourth pairs of driving wheels and are operated either by two vacuum cylinders or by hand from the fireman's side of the cab. In addition to this there is a powerful band brake acting on the crank pin disc of the rack engine. This consists of steel bands lined with brass blocks that fit into a series of grooves cut into the circumference of the discs and are worked by a screw.

The Caille-Potonie feedwater heater and feedwater pump form an important addition to three of these engines as already mentioned. The feedwater heater is shown in Fig. 3, and the double acting feedwater pump shown in Fig. 4. The heater consists of 264 tubes of between $\frac{5}{8}$ in. and $\frac{3}{4}$ in.



Front Elevation and Cross Section

in diameter. These tubes pass through the water chamber and have a heating surface of 10.8 sq. m. (116 sq. ft.). The steam required for this heater is taken from the exhaust of the cylinders and admitted to the heater through a regulating valve.

Fig. 5 shows the cab arrangement of the 0-10-0 locomotive. The firebox is fitted with the F. Marcotty smoke consuming device. There are two water gage glasses of the Klinger type, two injectors of the Friedmann pattern No. 7 and an Haussalter speed recorder. The cab is well arranged and has a ventilated double roof.

Two Bosch mechanical feed lubricators, having six feeds form part of the equipment. Gresham and Craven's steam sanding devices are applied to the leading and main driving wheels, sand being delivered from a sand box on top of the boiler.

The coal bunker in the rear of the cab has a capacity of 1,200 kg. (2,425 lb.) and the combined capacity of the water tank is 5,000 litres (1,320 gal.). Tool boxes are provided in the two corners in front of the coal bunkers and their covers serve as seats.

The total weight of the locomotive in working order is 51.98 metric tons (114,600 lb.) distributed approximately as follows: Leading axle, 10.96 tons (24,200 lb.); second axle, 11 tons (24,250 lb.); main axle, 9.98 tons (22,000 lb.); fourth axle, 10.11 tons (22,300 lb.), and the rear axle, 9.93 tons (21,900 lb.).

The principal dimensions of these locomotives are given in Table No. 2. A comparison between Table No. 2 and Table No. 1 indicates the change which has taken place in operating conditions.

Railway Session of the A. S. C. E.

THE ANNUAL MEETING of the American Society of Civil Engineers, held in New York on January 18-20, devoted one afternoon to a discussion of railway transportation matters. The speakers at this session were Howard Elliot, chairman of the Northern Pacific; William N. Doak, vice-president of the Brotherhood of Railroad Trainmen, and Col. F. A. Mollitor, chairman of the Board of Economics and Engineering, National Association of Owners of Railroad Securities, New York.

Mr. Elliot presented an extensive paper which, while covering some of the important engineering developments of the Northern Pacific, dealt chiefly with the situation of the railroads at the present time in contrast with the situation and development of the country over a long period of years. In regard to the present situation, he stated that there is too great a tendency on the part of the public and the law-makers to see only minor mistakes and that, in other words, they "hold the penny of failure so close to their eyes that they cannot always see the 20-dollar gold piece of accomplishment." He laid particular stress upon the question of an adequate return upon the investment in the railroads and added that although the railroads are in distress, agriculture in trouble, and industry slack and business poor, that those who are now advocating that one way to bring about a resumption of business activity is to further reduce railway income should handle the subject with care. He pointed out that private industries were afforded an opportunity to build up and make vital improvements to their plants during the war period. The railroads were not—in fact the opposite conditions prevailed—and thus it is only the more imperative that they be given a chance to build up their systems to a more normal basis.

He also spoke on numerous other problems concerned with railway transportation, concluding his talk with the following pertinent statement: "Railroads are common carriers of people and property; they are not common carriers of all the economic troubles of the country. These cannot be cured by reducing rates, by ruining the railroads and perhaps forcing government ownership, to which this country is opposed. Give brains, courage and management a chance once more. Declare a 10-year holiday in the ceaseless investigation of the transportation question and let the undivided attention and energy of owners, managers and employees be devoted to maintaining, operating and perfecting this engine of civilization—the wonderful railroad system of the United States."

Mr. Doak's remarks were concerned with the relation of employees and employers and expressed a belief on his part that the best results in the solution of the problems between the two would come through direct conferences and meetings. He condemned the large amount of ill-advised propaganda and half truths which had been and were still being disseminated, since it was undermining the faith of the public in the railroads and creating a spirit of bitter bi-partisanship. He stated that the managements and the employees should conduct a campaign of education based on a fair investiga-

tion and presentation of the facts to restore public confidence.

In regard to labor disputes, Mr. Doak brought out that compulsory arbitration had been tried in other countries and here and that it had generally failed as a means of satisfactory labor adjustment. He strongly favored mediation and conciliation, and bi-partisan regional boards of adjustment, with the selection of high-class men to act as mediators. The Labor Board should be given a fair trial to show what it can do; so far it has been in existence too short a period to judge fairly as to its merits, though he did not believe that tripartite boards would be ultimately successful because of the inexperience and lack of knowledge of one-third of the membership. There was always the possibility, he thought, of the presence of partisanship, because of the opportunity of being able, in a way, to pass the responsibility to a third party. Management, labor and industry, he said, were all right if permitted to follow a normal and proper course. The problem of today should be judged from a practical business standpoint and the theories, speculations and cries of the reformers should be disregarded.

Colonel Molitor discussed the situation of railway securities, bringing out the decline in the volume of sales as well as the decrease in their prices, as an indication of the decreas-

ing interest in them on the part of the investor and thus a weakening of the credit position of the roads. One of the chief factors which helped to bring about this state of affairs was the operation of the roads by the government. The continuation of the meagre return to the investors will keep railway credit at a low ebb, he stated, and unless the railway problem is removed from politics and an economic and liberal policy pursued instead, the result can only be financial disaster and early government ownership. In regard to the latter, he added that while the general public had been lulled into security since the passage of the Transportation Act, the undercurrent of political affairs was such, at present, to cause the belief that public ownership of railroads was closer today than three years ago.

Colonel Molitor offered as suggested remedies: That any further general reductions in freight rates should be discontinued; labor wages should be adjusted to the cost of living; the Labor Board should be transferred to the Interstate Commerce Commission; and the six per cent return should be continued as a measure of rate making. He also added that railway employees should be prohibited by statute from striking and that labor unions should be required to incorporate and to file financial reports to the Secretary of Labor.

Interchangeable Mileage Bill Passed by Senate

Strong Objections Offered Because It Favors a Class That Can Best Afford to Pay Full Rates

WASHINGTON, D. C.

A BILL directing the Interstate Commerce Commission to require the railroads to issue interchangeable mileage tickets for not less than 1,000 nor more than 5,000 miles and to prescribe the rate therefor was passed by the Senate on January 21, after three days of debate, in the form of a substitute offered by Senator Cummins for S. 848, which would have directly required the railroads to issue 5,000-mile tickets at a rate of 2½ cents a mile. There was no record vote. The substitute as originally offered by Senator Cummins would have "empowered" the commission to require the mileage ticket. Before passage this was amended to "direct" the commission, and the bill as passed is as follows:

Be it enacted, etc., That section 22 of the act entitled "An act to regulate commerce," approved February 4, 1887, as amended, is hereby amended by inserting "(1)" after the section number at the beginning of such section and by adding to the section two new paragraphs, as follows, to wit:

"(2) The commission is directed to require, after notice and hearing, each carrier by rail, subject to this act, to issue at such offices as may be prescribed by the commission joint interchangeable mileage tickets at a just and reasonable rate per mile, good for interstate passenger carriage upon the passenger trains of any and all other carriers by rail subject to this act. Such tickets may be required to be issued for any distance not exceeding 5,000 miles nor less than 1,000 miles. Before making any order requiring the issuance of any such tickets the commission shall make and publish such reasonable rules and regulations for their issuance and use as in its judgment the public interest demands; and especially it shall prescribe whether such tickets are transferable or non-transferable, and if the latter, what identification may be required; and especially, also to what baggage privileges the lawful holders of such tickets are entitled.

"(3) Any carrier which, through the act of any agent or employee, willfully refuses to issue or accept any such ticket demanded or presented under the lawful requirements of this act, or willfully refuses to conform to the rules and regulations lawfully made and published by the commission hereunder, or any person who shall willfully offer for carriage any such ticket contrary to the said rules and regulations shall be deemed guilty of a misdemeanor, and upon conviction shall be fined not to exceed \$1,000.

The title was amended so as to read: "A bill to amend section 22 of the act entitled 'An act to regulate commerce,' approved February 4, 1887, as amended."

The bill, S. 848, introduced by Senator Watson of Indiana at the instance of the commercial travellers' organizations, was but one of several which have been introduced in Congress. Hearings had been held by a subcommittee of the

Senate committee on interstate commerce, but no action had been taken by the committee when Senator Robinson of Arkansas obtained the unanimous consent of the Senate to discharge the committee from consideration of the bill and to take it up in the Senate.

Attempt Made to Fix Rate Per Mile

It was apparent at once that there was a strong sentiment in the Senate for a mileage book at a reduced rate but after Senator Cummins had proposed his substitute there was a vigorous debate between those who, under Senator Robinson's leadership, desired to fix the rate per mile in the bill, and those who strongly insisted that the rate and the terms should be left to the commission. While the bill was proposed and discussed largely from the standpoint of the commercial traveller, many senators dealt with it mainly as a means for reducing passenger fares, and the debate was made the occasion for a wide range of discussion of the railroad rate situation, both freight and passenger, in which the present level of rates was charged by many with a large share of the responsibility for the depressed condition of business. A number of the advocates of the bill desired to reduce the mileage to 2,000 or even 1,000 miles in order to make the mileage books more generally available.

Senator Cummins read a letter from Commissioner Esch, on behalf of the legislative committee of the Interstate Commerce Commission, pointing out many defects in the bill as it stood and the inadvisability of fixing rates or fares by statute.

Senator Robinson and other advocates of the bill fixing the rate insisted that the railroad revenues would be increased rather than diminished by the reduction, and in answer to the contention that the rate should be left to the commission, said that the membership of the commission is divided in opinion both as to their power, without additional legislation, to require interchangeable mileage tickets and as to the policy of doing so. Senator Robinson said that while W. G. McAdoo was in charge of the railroads he had issued an

order abolishing reduced mileage book rates for the purpose of reducing travel rather than for the purpose of increasing revenues. Senator Cummins retorted that if it was McAdoo's purpose to reduce travel he failed signally, because until 1921 the passenger travel upon the railroads increased by leaps and bounds under the increased rates.

May Prevent Reduction of Freight Rates

Senator Cummins made a long speech in which he said he believed in the system of mileage book tickets and that he had no doubt that the commission when vested with power will speedily make the necessary order. He did not, however, feel like reviewing the action of the Interstate Commerce Commission and insisting that it is less qualified to enter a judgment upon this question than the Congress, which must necessarily act with very inadequate and imperfect information. First, Senator Cummins said, the bill as proposed would be obviously unconstitutional, as fixing an arbitrary rate without proper investigation as to the difference warranted between the mileage rate and the regular rate and, second, if it were constitutional it is manifestly unwise for Congress to attempt to fix either freight rates or passenger rates. His third objection was that at this time no obstacle should be put in the way of the efforts of the commission or of the carriers to reduce freight rates. "The passage of this bill," he said, "will just as surely arrest the progress of that movement as that time is to go on."

His fourth objection was that the difference of over 1 cent a mile would be the grossest sort of discrimination in favor of corporations and individuals who can afford to buy \$125 worth of transportation at one time. The fifth point was that the bill would take direct possession of the authority which, in his judgment, is vested in the several states, because it attempted to fix passenger rates within the states.

In reply to Senator Robinson's assertion that reduced rates will produce greater revenues, Senator Cummins said the commission is now investigating that question, but, he said, "there is not a man of intelligence within the borders of the United States who will assert that the revenues of the railroad companies are now more than they ought to be," and "there is not a lawyer in the United States who will assert that if the Interstate Commerce Commission did anything that reduced their revenues below the point at which they now stand the order of the commission would be sustained in any court."

Senator Cummins said that the Senator from Arkansas and Senator Smith of South Carolina, who had also criticized the present rates, assume that "all that is the trouble with the world is either a high passenger rate or a high freight rate." "The world is sick," he said, "with a great variety of diseases, and high rates may be one of these diseases."

When Senator Robinson asked whether Senator Cummins thought it is possible to restore vitality and prosperity to American business without a reduction of rates, he replied in the affirmative.

"Suppose the price of corn were \$1 a bushel, or \$1.50 a bushel," he said, "our farmers would not lack prosperity on account of the high freight rates. Freight rates have nothing to do with making the corn worth \$1.50 a bushel. Freight rates have a good deal to do with the amount which the farmer receives from the price paid for his corn. If the farmer could sell his product at \$1.50 a bushel in my state, he would be prosperous even though he paid the present high rates."

Prices and Freight Rates

This led to an interesting discussion of prices and freight rates, in which Senator Cummins said the low price of corn is brought about because there are a great many people who do not want to buy corn. Senator Robinson insisted that there are millions of people who are anxious to buy corn at a reasonable price if it can be transported to them at a

reasonable price. Senator Cummins pointed out that the freight rates are borne by the farmer and that high rates in the United States do not produce the trouble in Europe or the reasons why Europe does not buy more of our corn.

"To suggest that the high freight rates and the high passenger rates are the cause of all the evils with which we are now afflicted," he said, "is to close our eyes to countless evidences of misadjustment and maladjustment not only throughout our own country, but throughout the world. I want to see freight rates come down, but I want the system of transportation which we have built up maintained at the same time."

When the time came for a vote on the bill, Senator Robinson proposed the amendment "directing" the commission instead of merely "empowering" it, and said with that modification he would somewhat reluctantly accept the Cummins amendment. Senator Harris of Georgia attempted to add an amendment requiring railroads to use steel cars for passenger service, but it was ruled out on a point of order. Senator Trammell, before Senator Cummins' substitute had been voted on, secured the adoption of an amendment to the original bill, to provide for 1,000-mile books instead of 5,000-mile books, but after the adoption of Senator Robinson's amendment, the Cummins substitute was adopted. Among those who supported Senator Cummins in opposing the fixing of rates by statute were Senators Pomerene, Kellogg and Capper, while Senators Poindexter and Smith were the principal speakers with Senator Robinson in favor of fixing the rate by statute. Senator Smith said that Congress should direct the Interstate Commerce Commission to lower freight rates a certain percentage, the percentage to be governed very largely by the current average cost of material now used as compared with the cost at the time when the rates were advanced.

The letter from Commissioner Esch in commenting on S. 848, said in part:

"It may be proper to remark that in the past bills somewhat similar to this one have been referred to us for our views, and we have expressed our disapproval of them, not only on the grounds indicated but on account of the inadvisability, as it seems to us, of fixing rates or fares by statute.

"It has seemed to us that when reductions in fares were warranted they should be made in such a way that all travelers could benefit by them.

"The bill, in effect, creates a privileged or favored class into which no one may enter who has not \$125 available for the purpose. Whatever reduction in cost of travel is thus effected would inure, not to those of small means, who need it most, but to those with abundant moneys in hand, who need it least. The mileage ticket sought at a rate of 2.5 cents per mile would enable the holder to travel over the Southern Pacific line in Arizona or Nevada, where the base rate is 4.8 cents per mile, or over other lines in the state where the base rate is still higher, and in doing so to ride in Pullman cars without paying the so-called Pullman surcharge, which accrues to the rail carrier. His fellow passengers, sharing the same accommodations, would pay twice as much.

"The bill does not declare the existing base fares to be unreasonable. It amends an act under which we have found them reasonable. But, without any finding of the reasonableness which the act enjoins upon all rail carriers, it proposes to require them all to establish and maintain a much lower rate per mile for those who can afford to lay out \$125 in order to secure it. It also provides that as the general rate of fare for the rest of the public is reduced from its present exceptionally high level this special base shall be reduced in proportion, so that, whatever happens, the holders of these tickets shall always travel for less than anyone else.

"The bill disregards the fact that the President, through the director general, determined that a base rate lower than 3 cents per mile was too low and that the commission has since authorized 20 per cent increase in that base rate.

"It further raises the question whether any rail carrier subject to the act could justify any base higher than 2.5 cents per mile for any passenger after this bill should become law.

"The bill repeals portions of section 22 of the interstate commerce act, which provide for compliance with section 6 of that act in respect of the filing and publication of joint tariffs and which make applicable the penalties provided under section 10 of that act.

"The bill lays its obligation to sell and honor these interchangeable mileage tickets upon "each common carrier by railroad, or partly by railroad and partly by water, within the continental United States, subject to this act," and thus upon common carriers which now publish no passenger tariffs and carry no passenger traffic.

"The ticket may be issued and all the money collected by a carrier which does not participate in the transportation and is financially irresponsible.

"These are some of the obvious defects of the bill."

Wood Preservers Discuss Economics of Ties

Proceedings at Annual Convention Demonstrate Advance in the Use of Treated Timber

THE American Wood-Preservers' Association held its eighteenth annual convention at the Hotel Sherman, Chicago, on January 24-26, inclusive. This organization of men interested in the preparation and use of treated timber includes a large proportion of railway officers and is by far the largest single factor in promoting the use of treated cross ties in this country. For the railroad man particular interest is attached to the papers relating to the economics of tie utilization and tie production.

Earl Stimson, chief engineer of maintenance of the Baltimore & Ohio, presented a paper in answer to the question "Should Cost of Treating Ties Be Charged to Maintenance or Capital Account"? Mr. Stimson stated that the position of the railroad with respect to this depends upon the degree of prosperity or state of business credit. He himself favors the present practice of charging the cost of treating ties to maintenance.

Advance in the application of treated timber to car construction was reported by a committee on car lumber and a paper by Forrest S. Shinn on the Treatment of Car Sills and Decking. These papers and others of perhaps less specific application to the railroads are presented in abstract below.

The officers of the American Wood-Preservers' Association during the past year were: President, C. M. Taylor, superintendent, Port Reading Creosoting Plant (C. R. R. of N. J.-P. & R.), Port Reading, N. J.; first vice-president, F. J. Angier, superintendent timber preservation, Baltimore & Ohio, Baltimore, Md.; second vice-president, H. S. Valentine, assistant general manager, Eppinger & Russell Company, New York City; secretary-treasurer, G. M. Hunt, engineer, Forest Products Laboratory, Madison, Wis.

In the election of officers held on Thursday the following were elected: President, F. J. Angier; first vice-president, W. H. Grady, vice-president, American Creosoting Company, Louisville, Ky.; second vice-president, H. S. Sackett, assisting purchasing agent, Chicago, Milwaukee & St. Paul, Chicago; secretary-treasurer, George Hunt.



Loblolly Pine Trees Treated with Zinc Chloride—Condition After 16 Years of Service in Oklahoma.

The convention was opened by an address by R. H. Aishton, president of the American Railway Association, who commented on the insistent demand for efficiency in all phases of railway operation. He paid a tribute to the wood preserving industry for the constructive work which it is doing in stimulating the treatment of timber and thereby extending its life. He pointed out the close relationship of this industry to the railways as is evidenced by the fact that over 90 per cent of all of the timber treated is used by the railways and that their use of this material is increasing more rapidly today than ever before. He emphasized the importance of the Wood Preservers' Association giving more publicity to the constructive work which it is doing in order that the public at large may know what it and the railways are doing to promote economy and efficiency.

Following Mr. Aishton's address C. M. Taylor, president, reviewed the work of the association during the past year. Mr. Taylor placed particular emphasis upon the suggestion made by Mr. Aishton regarding the importance of disseminating information concerning the possibilities of timber preservation and the results which have already been accomplished. Mr. Taylor also pointed out that the association should keep constantly in mind that it is not sufficient for an industry to depend upon its past performances but that the success of the association, aside from its ability to make known what it is accomplishing, depends upon the industry and co-operation of all members to study along new lines and to develop the work of wood preservation in its diversified branches. He called particular attention to the necessity of studying the properties of the creosote oils as prepared at the present time and concluded his address by urging the members to keep constantly in mind the importance of the problem of wood preservation both to the railways and to the public at large.

Factors Affecting the Cost of Treated Cross Ties

By E. E. Pershall

Vice-President, T. J. Moss Tie Company, St. Louis, Mo.

The purchase of timber for conversion into cross ties is largely made in two general ways, i. e.:

1. The purchase of land and timber in fee.
2. The purchase of timber only on certain described lands.

The land values on which the timber may be standing has a very direct bearing on the cost of stumpage, as timber land having a relatively high potential value for farms or ranges, in most cases carries with it taxes that are very closely related to its future use. For example, there are certain swamp timbered areas, particularly where cypress, oak, and gum comprises the major portion of the stands, that make

exceedingly rich farm lands after the timber is removed and drainage ditches constructed.

Estimating the Value of Timber

Values of timber and timber lands, as may be used for the manufacture of cross ties, are in most cases determined by experienced timbermen, who are not only expert at estimating the amounts of the various kinds of timber standing, but much more importantly the numerous considerations involved in the profitable removal of the timber from stump to river bank or railroad. The amount of labor in the imme-

diate territory available for carrying on the making and hauling of ties, the character and topography of the timberlands, which always affects most directly the amount of the standing timber that will be actually removed at a reasonable cost, the length and character of the haul to the railroad or river bank; the cost of driving, rafting, or barging from river bank to railroad, where necessary; and the freight rates from prospective shipping points to certain large rate basing points, such as Cairo, Thebes, St. Louis, Kansas City, Chicago, Louisville, Cincinnati, etc.; all enter very pertinently into the proper valuation of a profitable timber investment.

Various Species of Timber and

U. S. R. R. A. Specifications

Prior to the existence and general acceptance of the cross tie specifications of the United States Railroad Administration, a very substantial amount of standing timber of such species as hickory, ash, elm, maple, gum, and pine, that always grew on timber lands together with white and red oak, were left standing, in many cases, to the ravages of decay, fires, winds or the girdling of the future farmer. The general sale and purchase of cross ties on the basis of fair values for the various species enumerated, or better still, classified under the U. S. R. R. A. specifications, has done much good toward the conservation of timber through prompting the timely conversion of species other than oak into cross ties rather than allowing a very substantial percentage of good sound trees of these species to lapse into the category of cutover lands and thereafter to eventual waste.

Manufacture of Cross Ties

The manufacture of cross ties, after felling the tree and cutting the bole into eight foot or multiple logs, is accomplished by hewing and sawing. The hewing of cross ties is at best but a rough wood-working operation that cannot, in the majority of instances, be carried on within a restricted tolerance of dimensions, and a broadaxe in the hands of a steady and skilled tie maker must some times deviate from straight lines and parallel faces. An attitude of appreciation of these unintentional slips of the tie maker's broadaxe on the part of the railroad inspector who ultimately grades the cross ties for the basis of invoice is called "the exercising of some judgment" by the majority of our best tie men, but the justification therefor does not by any means meet with universal approval.

The manufacture of cross ties by saw mills is generally done in the Mississippi Valley territory by the use of so called "portable tie mills." After the tree is felled and bucked into logs, teams and log wagons haul 3 to 5 logs per load to the mill set, where they are sawed later into cross ties and lum-

ber one inch thick, commonly called "tie siding." The price obtainable for this tie siding is a very important factor affecting the cost of the cross tie, but fortunately or unfortunately as the case may be viewed, the prices for tie siding are always highest when cross ties are finding a ready market, and the siding can hardly be sold at all when cross tie prices are depressed.

Freight

One of the largest factors entering into the cost of the treated cross ties is freight. These transportation charges, as at present in effect, are quite double the legal tariffs in effect for identical services in 1913. Cross ties are a relatively low priced commodity when figured on the basis of weight and values at point of shipment, so that the rate of freight to point of use often amounts to more than the first cost of the cross tie at point of production.

The character of the freight rates used is of course the result of years of evolution in the matter of freight rate structures, but they are generally based upon a per cwt. or a per tie basis. In the absence of specific rates on cross ties, the rate of freight applicable on rough lumber of the same species is generally effective.

The use of local rates from point of origin to treating plants, and local rates out of treating plant to destination are not generally used, except at rate breaking points, such as river crossings, where, for certain reasons, the combination of local together with particular conditions defining the movement from point of origin to treating plant, and treating plant to destination, give a more advantageous arrangement than treating in transit on the basis of through rates from original point of origin to destination.

It is further obvious that as cross ties are purchased in the largest extent by common carriers, the question of routing and billing is a very important factor entering into the cost of the treated cross tie, particularly where there are usually four or five junction points available.

Selling Arrangements

The sale of cross ties, either untreated or treated, as the buyer may elect to purchase, is generally done by negotiation, and contracts are usually based upon: (A) Flat price for a specific number of ties; (B) cost-plus arrangements, and (C) price adjustments in line with market conditions.

Method C is but a continuation by mutual agreement of method A. Method B is self-explanatory as to principle. Cost-plus arrangements have several advantages in avoiding any substantial losses to the manufacturer due to rigid inspection or adverse market fluctuations, but usually requires a system of strictest accounting, which, under certain conditions, may be quite unwieldy.

The Economics of Tie Renewals

In a paper on the Economics of Cross Tie Renewals, V. K. Hendricks made a comparison of three formulas advocated for calculating the annual cost of cross ties. These methods are as follows:

- Without consideration of interest.
- By the use of simple interest.
- By the use of compound interest.

In order to adopt the simplest method consistent with reasonably accurate results, we should determine the difference in results by these three methods, which methods are represented respectively by the following formulas:

$$a. A = \frac{C}{n} \quad c. A = C \frac{(1+R)^n R}{(1+R)^n - 1}$$

$$b. A = \frac{C}{n} + C R$$

In each formula: A = Annual cost per tie.
C = First cost of tie in place.
R = Interest rate.
n = Life of tie in years.

Mr. Hendricks showed that these methods gave decidedly varied results. For instance, based on the three methods given above, the following tabulation shows results for certain ties having a life of 6, 12, and 18 years, and at certain assumed total costs in track:

| Case No. | Total cost in track | Average life of ties in years | Annual Cost per Tie | | |
|----------|---------------------|-------------------------------|---------------------------|----------------------------------|------------------------------------|
| | | | No interest a cents | Simple interest b 6% cents | Compound interest c 6% cents |
| 1 | \$1.20 | 6 | 20.0 | 27.2 | 24.404 |
| 2 | 2.40 | 12 | 20.0 | 34.4 | 28.7 |
| 3 | 3.60 | 18 | 20.0 | 41.6 | 33.3 |
| 4 | 1.90 | 12 | 15.8 | 27.2 | 22.7 |
| 5 | 2.36 | 18 | 13.1 | 27.2 | 21.8 |
| 6 | 2.046 | 12 | 17.05 | 29.34 | 24.404 |
| 7 | 2.64% | 18 | 14.67 | 30.52 | 24.404 |

This demonstration was carried further by taking a particular case involving a road requiring a total of 1,800,000

ties from which, by carrying out the various methods, the inconsistency of methods *a* and *b* was clearly shown, leaving only method *c* as a logical solution. Mr. Hendricks also offered the following as the factors which must be taken into consideration in determining the first cost of a tie in place.

1. Purchase price of ties, f. o. b. cars.
2. Inspection (of ties and treatment) and handling charges, including distribution of ties.
3. Work train charges or estimated cost of transporting over company lines (both to and from the treating plant in the case of treated ties).
4. Freight charges over foreign lines, and switching charges.
5. Interest on the cost of ties during the period they are held for seasoning, provided this is not included in the purchase price.

6. Interest on investment in any real estate, plant, tracks, or other facilities required for procuring, seasoning, or treating the ties, when not included in the purchase price, and also maintenance of such property.
7. Cost of adzing and boring before treatment, and any similar expenses not included in the cost of treatment.
8. Cost of treatment.
9. Cost of the plates. We have no authentic information as to the life of tie plates, but if we assume the life the same as the life of a treated tie, then for a tie having only half that life we should include only half the cost of tie plates, and for other lives in proportion.
10. Cost of spikes. In comparing wooden ties with wooden ties, however, the cost of spikes will be the same and that cost could be omitted without material error; in comparing wooden with metal ties, the spikes must be included to correspond with the metal tie fastenings.
11. Cost of placing ties in track.

The Use of Treated Timber in Cars

The Committee on Car Lumber presented a report on the treatment of timbers used in cars and submitted recommendations on practice applicable to this particular field for the treatment of timber. An abstract of the report follows:

Since decay is responsible for more repairs to wooden cars than any other single factor it follows that a way must be found to prevent decay without retarding the work of shop forces engaged in repairing the cars. The pressure treatment is superior to other known methods of preserving wood and creosote is the best agency by which its physical life may be extended. Zinc chloride and sodium fluoride are also proven wood preservatives of high rank, but to be of any material value they must be applied under pressure, while the application of creosote by means other than pressure, such as non-pressure treatments, will unquestionably add to the life of the timber so treated.

The committee has studied every conceivable method of treating car timbers by the pressure process after they have been framed, and has found them impracticable. In most cases treating plants are located many miles from the car shops, meaning that after the timbers have been framed they must be loaded on cars and sent to the plant for treatment.

There is also the usual objection to the use of creosoted timbers that is always met with on account of refusal of

labor, especially the semi-skilled labor, usually employed around car shops, to handle these timbers after they have been treated. However, this feature could be overcome by the use of zinc chloride or sodium fluoride, which are not offensive to handle, and if it were practical to apply either preservative without pressure our problems would be nearer solution.

This committee earnestly desires to see some definite step taken toward preserving car lumber and recommends the very simple method of giving all points of contact a brush treatment, using two brush coats of hot creosote. This should also apply to roofing and in the case of open and stock cars to the decking, posts and entire interior of the car.

This treatment should be applied to all points of contact regardless of whether the timber is green or dry, or whether it is white oak, red oak, pine, fir, or any other species. The best results will be obtained if the timber is dry, but it is not always dry when put in a car and we must face the conditions as they actually exist. It is certainly better to paint creosote on a green piece of timber than to put none on it at all, and this principle if accepted, must be general and cover all lumber used in freight car construction and maintenance.

It has been suggested that the actual application of the creosote be supervised by the department of timber preservation of the railroad.

Burlington Treats Car Lumber

Supplemental to the above report, Forrest S. Shinn, supervisor of plant, Chicago, Burlington & Quincy at Galesburg, Ill., presented a statement of the progress in preserving car timbers on that railroad. An abstract of Mr. Shinn's statement follows:

The Burlington has treated 1,297,188 ft. b. m. of car sills and 1,815,804 ft. b. m. of car decking. These were treated with the straight creosote process in the following years:

| Year | Sills, Board feet | Decking, Board feet |
|------------|----------------------|------------------------|
| 1911..... | 104,700 | 115,728 |
| 1912..... | 409,764 | 1,087,116 |
| 1913..... | 339,720 | 153,012 |
| 1914..... | 223,500 | 89,892 |
| 1915..... | 53,736 | 56,688 |
| 1916..... | 166,068 | 176,796 |
| 1917..... | ..... | 79,888 |
| 1918..... | ..... | 56,688 |
| Total..... | 1,297,188 | 1,815,804 |

We are not in a position as yet to know just what results will be obtained from this treatment, as none of the lumber has been taken out for any cause except on account of being broken; however, in view of the fact that we are taking out yearly a large amount of untreated flooring on account of rot we feel that the money spent for treatment has brought good returns. We have not made any tests on this material,

comparing the strength of the treated lumber with the untreated, but from close observation have come to the conclusion that treatment very materially increases the hardness and makes it much more resistant to wear. We find that many untreated planks in cars built in 1911 and 1912 have been worn so thin that they had to be replaced.

In November, 1921, two treated planks were removed for inspection from the end of C. B. & Q. car 67391, built in May, 1912, with treated sills and flooring; two treated gangway planks from C. B. & Q. car 67190, built in February, 1912, with treated sills and flooring; and two treated gangway planks from C. B. & Q. car 68729, built in September, 1915, with treated sills and flooring. There was no sign of decay on either the sills or flooring. The planks were slightly worn but were perfectly sound and, from all appearances, were good for as many years more life as they had already given. On the same day two untreated gangway planks were also removed from C. B. & Q. car 67261. This car was built in March, 1912, with treated sills and flooring, with the exception of the gangway plank which was not treated. These two untreated planks were warped, shattered on the ends, and worn down to less than half the original thickness.

In the last month I have inspected 200 stock cars built in

1914 or earlier, 100 of which were built with treated sills and decking and 100 built with untreated sills and decking. The treated decking is in as good condition as when first laid down, showing no signs of decay, warp, or check, while the untreated decking is badly warped or buckled and all of it is more or less checked, and in a large percentage the ends are badly shattered.

We feel that some time in the future we are going to be able to prove conclusively that the treatment of sills is justifiable. I have seen many decayed sills in cars built 1900 to 1906 and I am sure that everyone will agree with me that a

well treated car sill will never show any signs of decay unless it was decayed before being treated.

In addition to the treatment of sills and decking for stock cars we treated, with the Burnettizing process, sub-flooring for one dining car that was placed in service May, 1921, and one that was placed in service June, 1921. We also treated sub-flooring with the Card process (zinc chloride and coal tar creosote) for two dining cars that will be placed in service soon. We have found that sub-flooring in the kitchens of these cars rots quickly and are sure that we can overcome this by preservative treatment.

Report on San Francisco Bay Marine Piling

The conditions in San Francisco Bay and the study of constructions that will resist the inroads of marine borers was the subject of another extended report presented by a special committee organized for this purpose. This same subject was treated in a previous report which was abstracted in the RAILWAY AGE of February 18, 1921, page 420, and the present report covers much of the same ground but in greater detail and in the light of more complete information. The conclusions of the committee which are given below are presented in the same form as in the report abstracted in the RAILWAY AGE of February 18, 1921, the changes from the previous report being shown in italics. These conclusions are as follows:

(1) Marine borers are very active in San Francisco Bay and connected waters, and in places where their attack is severe will destroy untreated piling in as short a time as six to eight months. In other places the untreated piling may last from two to four years.

(2) The information secured indicates that it is reasonable to expect a life of five to eight years from paint and batten protections in *sheltered waters*, if the work is well done. If it is not well done, or if the covering is damaged by careless handling or if *unprotected wood is exposed by mud scour*, this range of life cannot be expected.

(3) *The data so far in hand indicates that it is fair to expect creosoted Douglas fir piling in San Francisco Bay to give a life of 15 to 20 years under present conditions. Certain piles are of authentic record from the Oakland Long Wharf which were sound when removed after a service of 29 years. Poor treatment, or damage to creosoted piling by careless handling, rafting, storage or construction, will materially reduce the life which might otherwise be rendered by such piling.*

(4) Most of the attack on creosoted piling by marine borers, which the committee has observed throughout this survey, appears to have begun in spots where untreated wood has been exposed by damage in handling the piles or placing the superstructure. It is urgently recommended that improvements be made in the methods of handling creosoted piles and building structures upon them, so that damage to the surface of the piles may be reduced to a minimum.

(5) Precast reinforced concrete piles and pile casings have not been in use in San Francisco Bay a sufficient length of time to determine their ultimate life. A detailed examination of those structures which have been in service for 10 years shows no evidence of deterioration *below high water line*, and they seem capable of a long further life. The length of life to be expected from this type of construction is largely dependent upon the quality of materials and workmanship and the skill and care with which they are employed; and any laxity in these particulars will materially shorten the length of service which may be secured.

(6) *Reinforced concrete cylinders cast in open caissons have been in use for 12 years. Although the average life of many earlier cylinders has been considerably shortened by construction defects, these cylinders with minor repairs still give promise of a long period of service. Similar cylinders designed and constructed in accordance with best modern concrete practice should constitute a type of construction only excelled for longevity by solid fill or mass concrete.*

(7) Cast in place concrete pile jackets may be expected to give satisfactory results if properly constructed of suitable materials and proper regard is given toward exclusion of sea water from forms. The difficulties of this type of construction, however, are of such a nature that the probability of securing a maximum length of life is less than in the case of precast concrete piles or pile casings.

(8) *Copper sheathed piles have given very satisfactory service*

in locations where damage from abrasion and theft can be minimized. Such piles carefully prepared and handled fall into the class of best surface protections, when used under the conditions indicated.

(9) The selection of a type of piling or pile protection for a given structure must be made upon the basis of cost and permanence of the materials under consideration, the character of the structure and the probable need for future alterations to meet the changing requirements of commerce. When a comparatively short increase over the life of *untreated* wooden piling is sufficient, the surface protections will often be found economical in waters not exposed to severe storm action; if a moderately long physical life approximating the average economic life of marine structures in this harbor is desired, a good creosote treatment will provide it at the lowest annual cost so far as present knowledge goes; if conditions warrant building for the greatest permanence, with less regard for first cost, concrete construction *has shown a high value in this harbor*. For the protection from further damage of wooden piles already in place and showing attack by borers, not yet severe enough to require condemnation, the concrete casting, precast or poured in place, is the only means of salvage so far found by the committee.

The subject of plant operation treated by sub-committees covered six phases of this work. Papers presented include one on the Requirements for Pressure Machinery Utilized in Preserving Plants and one on Material Handling, which was devoted primarily to the equipment required in large lumber yards.

The Committee on Preservatives presented a report on the properties and supply of certain special oils including vertical retort tar oils, low temperature coal tar oil, blast furnace oil and high temperature petroleum gas tar oil. Tentative specifications were also submitted for creosote oil to be used for non-pressure treatment and for creosote oil to be used for marine piling treatment. C. Henri Strawn, official photographer of the Atchison, Topeka & Santa Fe, Topeka, Kan., presented a paper on Photography in Wood Preservation.

The Committee on Utilization and Service prepared reports by sub-committees on Economics, Track, and Flooring and Paving.

The sub-committee on tie service test records presented the usual tabular statement of tie service records prepared by the Forest Products Laboratory at Madison. No detailed report was presented on the results obtained on an individual railroad.

AT THE OPENING SESSION on January 30 of the annual meeting of the National Civic Federation at the Hotel Astor, New York, the question of industrial mediation and conciliation will be discussed. The proposals to make the decisions of the Railroad Labor Board mandatory, to combine the Board with the Interstate Commerce Commission or to abolish it entirely will be taken up. The principles involved in a court of industrial relations such as that in Kansas will be discussed. Among the speakers will be Ben W. Hooper, of the Labor Board, B. M. Jewell, of the Railway Employees' Department of the American Federation of Labor, and Charles P. Neill, umpire in disputes arising between coal operators and the anthracite miners.

Proposal for a Commissioner General of Transportation

WASHINGTON, D. C.

THE COMMITTEE on Railroads of the Chamber of Commerce of the United States has prepared a summary of the recommendations to be made in its report to the board of directors, which is to be considered at the meeting of the National Council of the chamber to be held on February 8 and 9, at which time that body will be asked to advise the board of directors on the questions involved.

It is the sense of the committee that there should be some governmental agency adequately equipped, having appropriate jurisdiction, and the duty to promote, sustain and develop the transportation facilities of the country in the light of the public interest, before committees of Congress and before the various governmental agencies now in existence or hereafter created that have power of action or decision in respect to any matters affecting transportation.

Pursuant to this principle the committee presents the following recommendations:

1. That the Chamber of Commerce urge Congress to enact appropriate legislation authorizing the President to appoint and prescribe the compensation of a special administrative officer with the title of commissioner general of transportation.

2. The commissioner should hold office subject to the will of the President, and upon the occurrence of a vacancy in the office the President should appoint and prescribe the compensation of a successor.

3. The commissioner should be selected because of his familiarity and experience with transportation conditions, problems and necessities, and should keep himself informed of the transportation needs of the country and make such recommendations to all governmental agencies charged with the regulation of interstate transportation as he may find will be for the public interest and will tend to coordinate the administration of the laws respecting interstate transportation by land, water and air for the promotion and development of a national system of rail, water, highway and aerial transportation, and will make possible the articulation and economical use of all transportation facilities including tracks, highways, terminals, transfer facilities, docks and landing places. The commissioner should make an annual report of these matters to the President for transmission to Congress.

4. The commissioner should not be permitted to engage in any other business, vocation or employment during his term of office, nor to be eligible for any elective office within two (2) years after he ceases to be commissioner.

5. The commissioner should ascertain and report to the President from time to time for transmission to Congress each and all conflicting or inharmonious functions and rulings of any one or more boards, commissions, bureaus or other governmental agencies with respect to interstate transportation as related to the functions and rulings of any or all other such agencies that cannot be so reconciled by administrative practices as to promote the general development of a coordinated system of interstate transportation; such report to be accompanied by recommendations of the commissioner designed to correct and remove such inharmonious provisions and practices.

6. The commissioner should render all possible assistance to the Interstate Commerce Commission in facilitating and advancing the consolidation of railroads into a limited number of competing systems as authorized in the Transportation Act, 1920.

7. The commissioner should be notified of all hearings before any board, commission, bureau or other governmental agency now existing or hereafter created with respect to trans-

portation, rates, fares, regulations, terminal charges, wages, working conditions or other subject matter affecting interstate transportation; and should be entitled to be heard in person or by representative at all such hearings and to produce evidence that will tend towards a result that will promote and facilitate the continuous development of an interstate transportation system that will be adequate and efficient to meet the transportation needs of the country.

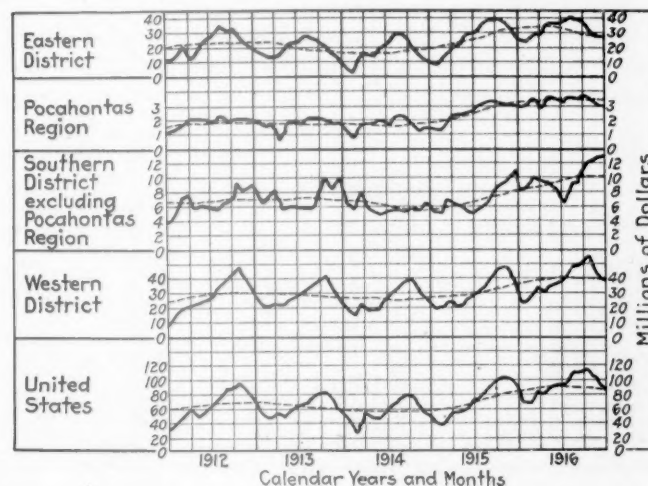
8. The commissioner should be authorized to call upon any department or bureau of the government for any information as to interstate transportation matters that may be needed by him in the performance of his duties; and such departments and bureaus should be required to furnish such information on his request.

9. The commissioner should be authorized to grant federal charters to corporations proposing to engage in interstate transportation by land, water or air, and upon application therefor, to convert state corporations so engaged into federal corporations so that by such conversion the existing corporation shall not close or interrupt its business as a common carrier, nor shall any of its existing obligations to others nor any existing obligations of others to it be in any manner prejudiced or impaired, but it shall continue as a corporation with the same officers and directors until other directors shall have been chosen under the federal charter and the same property assets and business as before its conversion, save only that jurisdiction over it as a corporation shall be vested in the government of the United States.

10. The Congress should make adequate appropriations for carrying out the foregoing provisions until such time as receipts from charter license fees to be authorized by Congress are sufficient for this purpose.

The Seasonal Variation of Operating Income*

THE TRANSPORTATION ACT, 1920, has made it necessary to know what rate of return upon investment is earned each year by steam roads. Before the actual earnings for an entire year are available, it is desirable to know how nearly the $5\frac{1}{2}$ or 6 per cent standard is being reached. In



The Seasonal Variation of Operating Income

order to utilize the monthly reports of revenues and expenses for this purpose, it is necessary to know what fraction of the year's income ought normally to be expected each month. One-twelfth of the annual amount is not an accurate standard

*A statement issued by the Bureau of Statistics of the Interstate Commerce Commission.

for what each month ought to contribute. As Congress made the three years ended June 30, 1917, the test of the rental to be paid for the use of the railroad properties, it may seem that this so-called "test period" should be taken as a basis for a statement of monthly variations in earnings. It happens, however, that this period is one in which there was a rapid growth of traffic so that the earnings of various months in each year were affected by the general annual trend upward, and by the abnormalities incidental to the war, as well as by seasonal changes.

Where the fiscal year ending June 30 is taken as the base, it may be noted that the result is to understate the relative importance of the months from July to December. For ex-

distorted by extraordinary fluctuations in revenues and expenses.

The plan of procedure was to compute a moving monthly average of twelve months, month by month for the five-year period. The deviation each month from this average was considered as the seasonal influence for that month. The following chart shows by districts the actual variation in railway operating income for each month of the five-year period and also the moving average representing the other than seasonal influences. It will be observed that in the Eastern district the peak usually appears in August; in the Southern district, in December; and in the Western district and the United States as a whole in October. The Pocahontas region

TABLE I—NET RAILWAY OPERATING INCOME WHICH CLASS I STEAM ROADS SHOULD EARN EACH MONTH IN EACH GEOGRAPHICAL DISTRICT TO PRODUCE AN ANNUAL RETURN OF 6 PER CENT ON AN INVESTMENT OF \$18,599,000,000, AS OF DECEMBER 31, 1920

| Month | Eastern district | | Pocahontas region | | Southern district (excl. Pocahontas) | | Western district | | United States | |
|-----------|------------------------|--------------|------------------------|--------------|--------------------------------------|--------------|------------------------|--------------|------------------------|--------------|
| | Amount (thousands) (a) | Per cent (b) | Amount (thousands) (c) | Per cent (d) | Amount (thousands) (e) | Per cent (f) | Amount (thousands) (g) | Per cent (h) | Amount (thousands) (i) | Per cent (j) |
| January | \$23,926 | 5.3 | \$3,046 | 7.5 | \$9,732 | 7.4 | \$27,080 | 5.5 | \$63,784 | 5.7 |
| February | 20,766 | 4.6 | 2,681 | 6.6 | 10,390 | 7.9 | 27,080 | 5.5 | 60,917 | 5.5 |
| March | 31,601 | 7.0 | 3,331 | 8.2 | 13,020 | 9.9 | 35,450 | 7.2 | 83,402 | 7.5 |
| April | 31,149 | 6.9 | 3,087 | 7.6 | 10,127 | 7.7 | 30,034 | 6.1 | 74,397 | 6.7 |
| May | 36,115 | 8.0 | 3,453 | 8.5 | 9,996 | 7.6 | 32,988 | 6.7 | 82,552 | 7.4 |
| June | 42,435 | 9.4 | 3,575 | 8.8 | 9,075 | 6.9 | 37,912 | 7.7 | 92,997 | 8.3 |
| July | 44,693 | 9.9 | 3,453 | 8.5 | 8,680 | 6.6 | 42,835 | 8.7 | 99,661 | 8.9 |
| August | 51,916 | 11.5 | 4,021 | 9.9 | 9,864 | 7.5 | 49,728 | 10.1 | 115,529 | 10.4 |
| September | 49,659 | 11.0 | 3,818 | 9.4 | 10,785 | 8.2 | 56,129 | 11.4 | 120,391 | 10.8 |
| October | 47,853 | 10.6 | 3,696 | 9.1 | 13,284 | 10.1 | 60,560 | 12.3 | 125,393 | 11.2 |
| November | 38,372 | 8.5 | 3,250 | 8.0 | 12,494 | 9.5 | 51,206 | 10.4 | 105,322 | 9.4 |
| December | 32,955 | 7.3 | 3,209 | 7.9 | 14,073 | 10.7 | 41,358 | 8.4 | 91,595 | 8.2 |
| Total | \$451,440 | 100.0 | \$40,620 | 100.00 | \$131,520 | 100.0 | \$492,360 | 100.0 | \$1,115,940 | 100.0 |

ample, in the test period, the three months of July are July, 1914, 1915 and 1916, while the three months of June are June, 1915, June, 1916, and June, 1917. The June average thus represents conditions nearly one year later than the July average. The distorting effect of the growth in traffic in over-emphasizing the earnings of the month of June, compared with July, is readily seen from the following:

| | Class I roads Railway operating revenues | |
|---------|---|---------------|
| | June | July |
| 1914 | ..... | \$255,958,639 |
| 1915 | \$249,495,045 | 259,217,158 |
| 1916 | 300,019,380 | 303,232,007 |
| 1917 | 349,669,869 | ..... |
| Average | \$299,728,098 | \$272,802,601 |

When the calendar year is used, the same distortion occurs, December being overemphasized as compared with January.

shows the least monthly variation, but August, on an average, is somewhat better than any other month.

It should be emphasized that we are here dealing with operating income, and not revenues or expenses. Expenses are spread more evenly throughout the year than are revenues, and hence the resultant income varies more widely from month to month than do the revenues. The percentage hereinafter given for monthly income variations should not be taken as the seasonal variation in the amount of business.

The results reached by the method above described have been modified slightly in preparing Table I in order to make the totals in both directions exactly consistent. The table shows the distribution of 6 per cent return on the investment of Class I steam roads by districts and by months. The investment is based on the tentative valuation as of December 31, 1919, used by the Interstate Commerce Commission for

TABLE II—CUMULATIVE TOTALS FROM JANUARY 1, FOR DATA SHOWN IN TABLE I

| Months ending with— | Eastern district | | Pocahontas region | | Southern district (excl. Pocahontas) | | Western district | | United States | |
|---------------------|------------------------|--------------|------------------------|--------------|--------------------------------------|--------------|------------------------|--------------|------------------------|--------------|
| | Amount (thousands) (a) | Per cent (b) | Amount (thousands) (c) | Per cent (d) | Amount (thousands) (e) | Per cent (f) | Amount (thousands) (g) | Per cent (h) | Amount (thousands) (i) | Per cent (j) |
| January | \$23,926 | 5.3 | \$3,046 | 7.5 | \$9,732 | 7.4 | \$27,080 | 5.5 | \$63,784 | 5.7 |
| February | 44,692 | 9.9 | 5,727 | 14.1 | 20,122 | 15.3 | 54,160 | 11.0 | 124,701 | 11.2 |
| March | 76,293 | 16.9 | 9,058 | 22.3 | 33,142 | 25.2 | 89,610 | 18.2 | 208,103 | 13.7 |
| April | 107,442 | 23.8 | 12,145 | 29.9 | 43,269 | 32.9 | 119,644 | 24.3 | 282,500 | 25.4 |
| May | 143,557 | 31.8 | 15,598 | 38.4 | 53,265 | 40.5 | 152,632 | 31.0 | 365,052 | 32.8 |
| June | 185,992 | 41.2 | 19,173 | 47.2 | 62,340 | 47.4 | 190,544 | 38.7 | 458,049 | 41.1 |
| July | 230,685 | 51.1 | 22,626 | 55.7 | 71,020 | 54.0 | 233,379 | 47.4 | 557,710 | 50.0 |
| August | 282,601 | 62.6 | 26,647 | 65.6 | 80,884 | 61.5 | 283,107 | 57.5 | 673,239 | 60.4 |
| September | 332,260 | 73.6 | 30,465 | 75.0 | 91,669 | 69.7 | 339,236 | 68.9 | 793,630 | 71.2 |
| October | 380,113 | 84.2 | 34,161 | 84.1 | 104,953 | 79.8 | 399,796 | 81.2 | 919,023 | 82.4 |
| November | 418,485 | 92.7 | 37,411 | 92.1 | 117,447 | 89.3 | 451,002 | 91.6 | 1,024,345 | 91.8 |
| December | 451,440 | 100.0 | 40,620 | 100.0 | 131,520 | 100.0 | 492,360 | 100.0 | 1,115,940 | 100.0 |

It becomes necessary, therefore, to segregate the seasonal variation from the general annual trend.

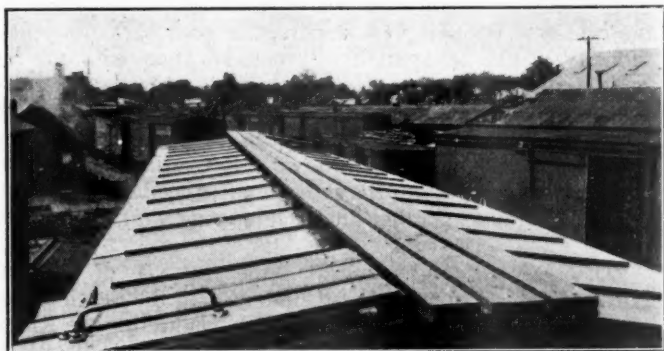
For the purpose of this study, the five-year period ending December 31, 1916, has been chosen. The reason for not going back of 1912 is that it is desirable to have the results by geographical districts, and the monthly returns were not so divided for a full year prior to 1912. The reason for stopping with 1916 is that the returns for the later years are

the purposes of Ex Parte 74, Increased Rates, 1920, 58 I. C. C. 229, with suitable modification for the classes of roads covered and for the increased investment of 1920. In Table II the same results appear cumulatively for successive periods from January. In getting the rate of return for any month or period, the process is to take such a proportion of six as the net railway operating income of the month is of the sums shown for the month or period in the tables.

Reclaiming Sheets of Outside Metal Car Roofs

Important Savings in Car Repair Costs Result from
Moderate Expenditures for Facilities

AS ONE of the results of pooling equipment and deferring maintenance during the period of federal control, owner lines are now having returned to them a great number of box cars requiring extensive repairs to roofs. At the present time one large eastern line has from 10,000



Car with Roof of Reclaimed Sheets

to 15,000 box cars equipped with various makes of metal roofs which are in need of roof repairs. Providing new metal for the roofs of these 10,000 to 15,000 cars would entail an expenditure of from \$500,000 to \$750,000. To avoid this heavy expense, the road has established plants for reclaiming used roof sheets at 31 points on its system where cars are repaired.

In the great majority of instances, the wear in the original metal sheets was due to poor material supplied during the war period, resulting in leaks occurring at the lower edge of the sheets at the eaves of the car where the sheets overlap the flashing. The plan for reclaiming the sheets involves their removal from the car, cutting off the worn end, reforming and painting.

The roofing sheets, now being reclaimed, originally were



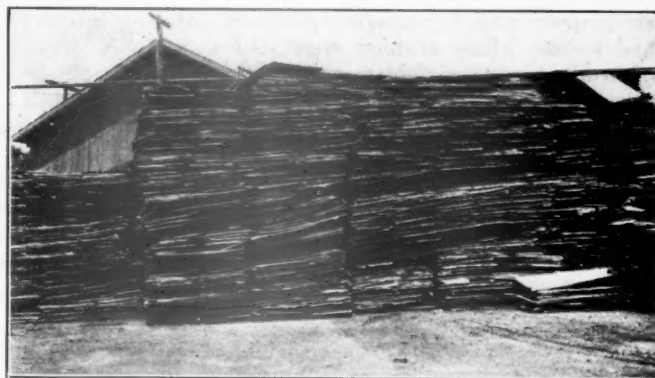
Sheets Before and After Reclaiming

of two lengths, 4 ft. 6 $\frac{5}{8}$ in. and 4 ft. 8 $\frac{7}{8}$ in. Both length sheets were used with 4 $\frac{1}{4}$ in. flashing. As reclaimed the 4 ft. 6 $\frac{5}{8}$ in. sheets are cut back to a length of 4 ft. 3 in. and used with 7 in. flashing if the wear in the original permits. Where the wear is greater the sheets are cut back to a length of 4 ft. 0 in. and used with 10 in. flashing. Sheets originally 4 ft. 8 $\frac{7}{8}$ in. long when reclaimed are cut back

to 4 ft. 5 $\frac{1}{2}$ in. for use with 7 in. flashing and to 4 ft. 2 $\frac{1}{2}$ in. when 10 in. flashing is used.

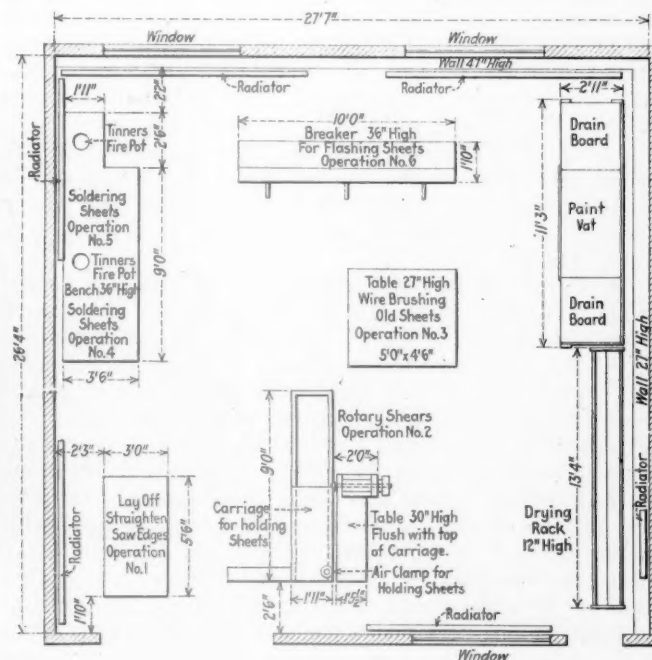
Roof sheets which are not suitable for use with either the 7 in. flashing or 10 in. flashing are squared and split in the center of the width after all defective metal has been cut off the ends, and are then formed into 7 in. flashing. The 10 in. wide flashing is made from new galvanized iron.

The drawing showing the arrangement of the facilities in



Defective Roof Sheets Formerly Used for Building Purposes or Sold for Scrap

the car roof reclaiming shop illustrates the simple and inexpensive layout and equipment required. The building is of frame construction, 26 ft. 4 in. wide and 27 ft. 7 in. long. The equipment is standard and includes facilities for straightening the sheets, rotary shears for cutting the sheets



Layout of Shop

and the flashing, a table used in connection with the shears for holding the sheets while being cut, a break machine for reforming the ends of the roof sheets and the flashing, a

table and wire brushes for cleaning old sheets, tinning and soldering outfits and painting vats and drying racks.

The reclaiming involves six operations; straightening, clipping, cleaning, soldering, reforming and painting. The painting is done by the bath method, and a second coat of paint is applied to the top of the sheets and the flashing after the roof has been rebuilt and applied.

In applying the reclaimed material to the car roofs standard practice, as it obtains with new material, is followed closely. The flashing is nailed to the side facia and a hold-on-clip or cleat is used to hold the flashing. This is nailed to the roof carlines or to the sheathing. Where there is no carline for the nails they are driven through the sheathing and clinched. The flashing has an interlocking seam at each end to prevent leaks.

One of the photographs shows a pile of defective roof sheets. Before the plan for reclamation was perfected these sheets were used for building purposes, covering bridge ties and so on. Many of them were sold as scrap or disposed of in fills along the right-of-way. Another photograph shows piles of roof sheets before and after reclaiming, while a third photograph shows a car roofed with the reclaimed material.

With the facilities described a daily output of sheets and flashing sufficient to provide roofing for five cars is secured at each of the plants. This is done with an expenditure totaling less than \$28 per day per plant or, in other words, at a cost slightly in excess of \$5 per roof.

President Discusses Transportation

GREATER ATTENTION to the development of inland waterways and to plans for the electrification of railways was urged by President Harding in his address at the agricultural conference at Washington on January 23. In discussing transportation the President said:

"No country is so dependent upon railroad transportation as is the United States. The irregular coast lines of Europe, its numerous indenting arms of the sea, as well as its great river system, afford that Continent exceptional water transportation. The vast continental area of the United States is quite differently situated, its greater dependence upon railroad transportation being attested by its possession of nearly one-half the railroad mileage of the world, and even this is not adequate. The inevitable expansion of population will enormously increase the burden upon our transportation facilities, and proper forethought must dictate the present adoption of wise and far-seeing policies in dealing with transportation.

"If broad-visioned statesmanship shall establish fundamentally sound policies toward transportation, the present crisis will one day be regarded as a piece of good fortune to the nation. To this time railroad construction, financing and operation have been unscientific and devoid of proper consideration for the wider concerns of the community. To say this is simply to admit a fact which applies to practically every railroad system in the world. It is as true regarding the railroads of Canada and Great Britain as it is in reference to those of the United States. It is equally applicable to the railways of Continental Europe, in whose development considerations of political and military availability have too far outweighed economic usefulness. In America we have too long neglected our waterways. We need a practical development of water resources for both transportation and power. A large share of railway tonnage is coal for railroad fuel. The experience of railway electrification demonstrates the possibility of reducing this waste and increasing efficiency.

"We may well begin very soon to consider plans to electrify

our railroads. If such a suggestion seems to involve inordinate demands upon our financial and industrial power, it may be replied that three generations ago the suggestion of building 260,000 miles of railways in this country would have been scouted as a financial and industrial impossibility.

"The waterway improvement represents not only the possibility of expanding our transportation system, but also of producing hydro-electric power for its operation and for the activities of widely diffused industry.

"I have spoken of the advantage which Europe enjoys because of its easy access to the sea, the cheapest and surest transportation facilities. In our own country is presented one of the world's most attractive opportunities for extension of the seaways many hundred miles inland. The heart of the continent with its vast resources in both agriculture and industry would be brought in communication with all the ocean routes by the execution of the St. Lawrence waterway project. To enable ocean-going vessels to have access to all the ports of the Great Lakes would have a most stimulating effect upon the industrial life of the Continent's interior. The feasibility of the project is unquestioned and its cost, compared with some other great engineering works, would be small.

"Disorganized and prostrate, the nations of Central Europe are even now setting their hands to the development of a great Continental waterway, which, connecting the Rhine and Danube, will bring water transportation from the Black to the North Sea, from Mediterranean to Baltic. If nationalist prejudices and economic difficulties can be overcome by Europe, they certainly should not be formidable obstacles to an achievement, less expensive, and giving promise of yet greater advantages to the peoples of North America. Not only would the cost of transportation be greatly reduced, but a vast population would be brought in immediate touch with the markets of the entire world."

Many of the speakers at the conference urged a reduction in freight rates as one of the most important means of improving the condition of the farmers.

The conference appointed a general committee on transportation, with H. J. Waters of Missouri as chairman, and also committees on railway, waterway and highway transportation. Among the members of the committee on railway transportation are E. E. Clark, former chairman of the Interstate Commerce Commission; T. C. Powell, vice-president of the Erie; M. J. Gormley, chairman of the Car Service Division, American Railway Association; Clifford Thorne, of Chicago, and S. H. Cowan, of Texas. Julius H. Parmelee, director of the Bureau of Railway Economics, is secretary of the committee. B. M. Robinson, president of the American Short Line Railroad Association, was appointed a member of the waterway transportation committee, and J. E. Forman, president of the Chicago, Rock Island & Pacific, a member of the committee on highway transportation.

JOHN G. WALBER, speaking for the Eastern railways, calls attention to the extravagance of the statements in the newspapers, to the effect that the revision in the rules for clerks announced last week by the United States Railroad Labor Board would result in a saving for the carriers of \$50,000,000 a year. The same figure was named, not long ago, in connection with the revision of the shopmen's rules. Neither of these estimates was authorized by the Labor Board or by any member of it. When employees, of the classes referred to, had their pay advanced in December, 1919, it was estimated that the total increased cost of labor would be \$25,000,000. It is obvious that a revision of only a portion of the rules, applying to less than 38 per cent of the employees covered by the \$25,000,000 estimate would not result in a saving of twice twenty-five millions.

Labor Board Announces New Rules for Clerks

Punitive Overtime After Ninth Hour and Employment of Men on "Split Tricks" Authorized

A NEW SET of 51 rules to govern the working conditions of railroad clerical employees was announced by the Railroad Labor Board on January 23. The most important departures from the provisions of the clerks' national agreement, which will be superseded by the new code, are contained in new rules relative to the payment of overtime, the so-called arbitraries or punitive payments and the employment of men on "split tricks." Under the new rules regarding overtime for clerical workers time and one-half is paid after the ninth hour instead of after the eighth hour as was the case under the overtime rule of the national agreement.

The principle of the eight-hour day, however, is specifically retained in the rules as it was in the recently announced codes to govern the working conditions of shop and maintenance of way employees. Where clerical work is intermittent, the new provisions permit the employment of men on "split tricks"—prohibited by certain provisions of the national agreement.

A dissenting opinion directed at the new overtime rules was made by the three railroad members on the Board, Samuel Higgins, J. H. Elliott and Horace Baker. This opinion termed the payment of punitive overtime for any service rendered by the clerical employees within the ten hour period as "unjust, unfair and unreasonable." This dissenting opinion was answered at length by W. L. McMenimen of the labor group on the Board and B. W. Hooper and G. W. W. Hanger, members of the public group. A. O. Wharton also appended a dissenting opinion, concurring in the statement signed by Messrs. McMenimen, Hooper and Hanger but expressing opposition to the provisions of the new overtime rule on the grounds that punitive overtime should begin after the eighth hour instead of the ninth.

The new provisions are effective February 1, and "apply to each of the carriers parties to the dispute covered by the decision, except in such instances as any particular carrier may have agreed with its employees upon any one or more of such rules, in which case the rule or rules agreed upon by the carrier and its employees shall apply on said road."

Board Approves 27 Rules of the Clerks' National Agreement

The clerks' national agreement contained 87 rules. The new code announced by the Board contains 51 rules, of which 27 are reproductions of rules of the national agreement. Six rules of the national agreement are automatically eliminated by new conditions and 15 rules have been changed—but 11 materially. Thirty-nine of the rules of the national agreement have not been mentioned in the new code, the points involved being left for negotiation between the individual carriers and their own clerical forces. Three rules covering new points of controversy have been added by the Board.

The 15 rules which have been changed in this order are in some cases more elastic and in others more specific. The principal change, as stated above, has been made in the provision pertaining to overtime. Under the clerks' national agreement hourly rated employees received time and one-half for overtime after the eighth hour and daily rated employees received time and one-half for overtime for work in excess of the full number of hours per week (produced by multiplying by eight the days of the weekly assignment). Under the new rule no such distinction is made

and all employees are paid pro-rata rates for the ninth hour and time and one-half thereafter for overtime.

Rules Requiring Punitive Payments Altered

The group of rules relating to payments for intermittent service, for reporting, for work during meal periods, when notified or called, when Sunday or holiday work takes less than a full day period, and for travel time in camp cars, have been revised in general to cut down partly payments to employees for which no service is received. The changes which have been made in these rules are summarized as follows:

Rule 58 of the national agreements provided in part that employees should be paid time and one-half on the minute basis for service performed continuous with and in advance of the regular work period.

The new rule eliminates this provision but continues the remaining part of the rule which provides for the payment of a minimum of three hours for two hours work or less when called to perform work not continuous with the regular work period.

Board Authorizes "Split Tricks"

Rule 49 of the national agreement relating to intermittent service prohibited the working of "split tricks," by providing for the payment of a flat monthly rate and setting a minimum of 48 hours per week for workers so employed. The new rule covering this point states:

Where service is intermittent 8 hours actual time on duty within a spread of 12 hours shall constitute a day's work. Employees filling such positions shall be paid overtime for all time actually on duty or held for duty in excess of 8 hours from the time required to report for duty to the time of release within 12 consecutive hours, and also for all time in excess of 12 consecutive hours computed continuously from the time first required to report until final release. Time shall be counted as continuous service in all cases where the interval of release from duty does not exceed one hour.

Under the old rule an employee reporting for duty at eight a. m. received time and one-half overtime after four p. m., although during that period he might have had several hours of idleness. The decision of the Board on this point was influenced by the charges which have been made that employees actually performed other work in such intervals. For instance at a station under the present rule where all the work, due to the arrival and departure of trains only in the morning and evening, comes within a spread of 12 hours, an employee covered by this provision would report for work in the morning, be released in the middle of the day without pay and report in the evening for the remainder of the day's work of 8 hours. Under the old rule he would have been paid punitive overtime for the work performed in the evening, or it would have been necessary to employ two shifts.

In commenting on this rule at the Labor Board it was said, "Employment conditions of this sort at the smaller stations caused criticism by the farmers who contended that the employment of unnecessary men and the payment of punitive overtime, because of periods of enforced but compensated idleness, exerted a demoralizing influence on labor conditions in the country. The new rule will not only allow the railroads to open many small stations with one shift of employees, but at the larger terminals, where the arrival and departure of trains is bunched, to employ baggagemen, train announcers, gatemen, train and engine crew callers,

and employees in similar positions on 'split tricks' instead of having to maintain two shifts."

Other Changes in Punitive Payment Provisions

Rule 50 of the national agreement, providing for the payment of a minimum of three hours' pay for employees called and not used, and for the payment of eight hours' pay if an employee so called is released before the end of a full day's work, has been changed to provide for the payment, under such conditions, of a minimum of but two hours instead of three, and for the payment of a minimum of four hours if worked any portion of the day, or the payment of eight hours where the employee is worked in excess of four hours. A provision has also been added to this rule stating that it does not apply "to regular employees who lay off of their own accord before completion of the day's work."

Rule 54 of the national agreement, providing for the payment of time and one-half to employees who work through their regular meal period, has been changed to provide for the payment of but pro-rata rates under these conditions.

Rule 65 of the national agreement, providing for the payment of a minimum of two hours at overtime rates for two hours' work or less, and pro-rata rates after the second hour of each tour of duty, to employees who are called to work on Sundays and holidays for a less number of hours than constitutes a day's work, has been changed to provide for the payment of employees under these conditions at the pro-rata rates for actual time worked with a minimum of three hours, and for the payment of time worked before or after the limits of the regular week day assignment in accordance with Rule 57, which has already been described.

Rule 66 of the national agreement, containing a method for determining the daily rate of employees who have heretofore been paid on a monthly or weekly basis, has been re-written to eliminate the specific method of computation. The remainder of the rule remains unchanged.

Rule 69 of the national agreement, providing for the payment of straight time to employees traveling in boarding cars during regular working hours, for traveling on Sundays and holidays during the hours established for work periods on other days, and for the payment of half time for time spent in traveling in boarding cars after 10 p. m. and before 6 a. m., has been changed to eliminate the necessity for paying for any time so spent after the regular work period hours.

In addition to these changes, the scope of the rules has been changed so that the clerks which this agreement covers have been divided into two classes, *i. e.*, clerical workers and machine operators. The exceptions to this rule have been changed so that "laborers" instead of "employees" on coal and ore docks, elevators, piers, wharves, etc., are excepted from its provision. The paragraphs of this rule, providing for the exception of personal office forces, chief clerks, supervisory agents at larger stations, foremen who supervise sub-foremen, etc., have been eliminated.

The rule of the national agreement, relating to the qualifications and definition of clerical workers, has been re-written to conform to the classification mentioned in the previous paragraph and is less specific in excepting certain classes of employees from the provisions of the rule. In this connection a new class of clerical workers, "students and apprentices qualifying for specific clerical work or as machine operators," are excepted.

Rule 76 of the national agreement, defining "duly accredited representatives," has been re-written to include not only "the regularly constituted committee representing the class of employees on the railroad where the controversy arises," but to include "any representative or representatives employees directly interested may select or designate."

A new rule adopted by the Board requires the carriers to

give employees who are leaving the service a letter showing the length of their service, the capacity in which they were employed and their cause for leaving, if the employee requests it.

The other changes made in the rules are of a minor nature and will not bring about any decided changes in the working conditions of clerical employees.

The rules of the national agreement which have been continued in the new code are those headed or pertaining to promotion, the eight-hour day, length of meal periods, continuous work without meal period, time of the meal period, changing starting time, starting time of shifts, employees recalled after completing their regular tour of duty, absorbing overtime, authorizing overtime, notification when time claims are disallowed, day of rest, temporary assignment, witnesses when attending court, rating positions, preservation of rates, pay of women employees, pay in new positions, posting notices, transfer by management and by seniority, transportation, incapacitated employees, furnishing of machines, bond premiums, free transportation and rates.

The rules of the national agreement which are remanded to negotiation between the individual carriers and their clerical forces include those headed or pertaining to vacancies and new positions, declining promotions, failure to qualify, declaring former position vacant, bulletins, temporary appointments, short vacancies, indefinite vacancies, long vacancies, change in rates, bidding for positions after absence, more than one vacancy, changing starting time, reducing forces, rosters, scope of roster, filing applications, transferring, consolidations, positions abolished, re-entering service, excepted positions, validating records, exercising seniority, hearings, appeals, further appeal, grievances, representation, right of appeal, advice of cause, exoneration, date of suspension, transportation, organization membership, pending decision, time limit, leave of absence and extension of seniority. These rules in general compromise Articles III, IV and V of the clerks' national agreement covering broadly the regulation of seniority, discipline and grievances and leaves of absence.

Regarding rules on vacations and sick leave with pay, the Board's decision says: In the opinion of the Labor Board the question of vacations and sick leave with pay is one which should be left at this time to the carriers and their respective employees for the adoption of such rules as may be severally and mutually agreed upon.

Those rules in the new code which are similar to rules of the national agreement do not carry with them the interpretations of the Railroad Administration, adjustment boards or similar agencies, according to the closing terms of this decision.

Railroad Members of Board File Dissenting Opinion

The dissenting opinion of Messrs. Higgins, Elliott and Baker, the railroad representatives on the Board, gave as reasons for their objection to the provision of the new rule which provides for punitive payment for service rendered beyond the ninth hour, the following:

Prior to Federal control of railroads, clerical forces generally were paid a monthly-rate basis which covered all service rendered.

Other classes of employees covered by the clerks' agreement, including freight-house laborers and other station employees, generally worked 10 hours per day and were paid at pro rata rates for all time worked; ordinarily the same hours of service per day are now required to meet business needs throughout the country along the lines of the carriers.

The clerks' rules govern a large class who are not clerks either by training or special skill required—such as yard clerks, messenger boys, chore boys, laborers, students, apprentices, et cetera.

The work of all classes covered by this agreement is to an extent intermittent and does not require constant application. With a lesser day than 10 hours the carriers cannot, with economy and efficiency, meet the demands of the public.

Punitive payment has but one justification—namely, preventing the working of unreasonable hours; therefore, it is our judgment

that the imposing of rules requiring punitive payment for any service rendered by employees covered by this decision within the 10-hour period is unjust, unfair, unreasonable, and burdens the carrier with an uneconomical condition.

Labor and Public Members Join

in Answering Dissenting Opinion

The answer to this opinion by Messrs. McMenimen, Hooper and Hanger takes up the dissenting opinion of the railroad representatives in detail. The following is an abstract of this answer:

The first paragraph of the dissenting opinion stating that "prior to federal control of railroads clerical forces generally were paid on a monthly rate basis which covered all service rendered" is termed "erroneous to the extent that a number of carriers were paying overtime to clerical and station employees prior to federal control."

The second paragraph of the dissenting opinion stating that employees covered by the clerks' agreement generally worked ten hours per day and were paid pro rata rates for all time worked is characterized as "erroneous to a very large degree" and "rather indefinite." In support of this opinion Messrs. McMenimen, Hooper and Hanger cite a large number of responses by individual railroads to a questionnaire sent out during federal control to ascertain certain facts with respect to the conditions of employment governing employees covered by Supplement 7 to General Order 27 which, it is claimed, covers the employees in question. Most of the answers quoted indicate that clerical employees did not work ten hours a day as a rule, the answers varying on different carriers. To further sustain their position, Messrs. McMenimen, Hooper and Hanger quote from the monthly report on employees' service and compensation of the Interstate Commerce Commission for the month of July, 1921, which shows that the various classes of employees covered by the clerks' national agreement during that month worked from 169 to 222 hours per employee on straight time, and from 1 to 17 hours overtime.

The statement in the dissenting opinion to the effect that "the Clerks' rules govern a large class who are not clerks, either by training or skill required, such as yard clerks, messenger boys, chore boys, laborers, students, apprentices, etc.," is refuted by the statement that the inexperienced clerical workers "comprise a very small percentage of the total." It is said, for instance, that the "yard clerks are among the most important clerks on the railroad and their work not only requires training and special skill but considerable responsibility."

Referring to the paragraph in the dissenting opinion which states that "the work of all classes covered by this agreement is to an extent intermittent and does not require constant application," Messrs. McMenimen, Hooper and Hanger again cite figures from the report of employees and compensation for July showing that the number of employees in that month, subject to the provisions of the clerks' rule, was 309,793. They add "it will be noted that approximately 205,000 of these employees are clerical workers. It has been conservatively estimated by certain railroad managers that about 50 percent of clerical workers in railroad service are employed in the general offices and a large percentage of the balance are in the larger freight stations, division offices and store departments where the work performed requires continuous application throughout the entire tour of duties. In any event Rule 49 of this decision provides that the eight hours work may be distributed within a spread of 12 hours without payment of any overtime."

A. O. Wharton Files Separate Opinion

Mr. Wharton's statement accompanying the Board's decision says:

"I concur in the statement made by the majority, although opposed to the provisions of Rule 57 for reasons set out in

the majority statement and because the principle of punitive payment for overtime after eight hours, for service of this character, is so well established and so generally recognized, and for the further reason that it is not my conception of the purposes of the Transportation Act wherein the Labor Board is charged with the duty of establishing 'just and reasonable' working conditions."

Interstate Cited

The Labor Board has cited the Interstate Railroad to appear before it on February 6 to determine whether or not that road has violated a decision of the Board in a controversy between this carrier and the Brotherhood of Railroad Trainmen and the Brotherhood of Locomotive Firemen and Enginemen. On December 31, 1921, the Labor Board ordered the Interstate Railroad to reinstate a switchman and fireman who claimed to have been discharged because they had responded to requests from union officers for information as to the status of wages being paid on the carrier. The carrier, according to the Labor Board, did not combat these charges but replied to the effect that it did not care to present any evidence in the case because it did not deal with its employees through the representatives of labor organizations.

The Board then sustained the position of the labor organizations and ordered the reinstatement of these men with pay for time lost. It is now charged that the carrier has refused to allow them to re-enter the service.

Automatic Train Stops in Use on American Railroads

THE notice of the Interstate Commerce Commission, calling upon prominent railroads to install automatic train stops, which was published in the *Railway Age* of January 14, page 189, has revived interest in the general subject of automatic stops, and many inquirers are calling for information concerning it. Apparatus of this character is already in use on 11 railroads in this country, of which four run both passenger and freight trains, and it will be of interest at this time to note briefly the situation on these railroads. The list below, "List A," gives the names of these roads, with some data concerning the kinds of apparatus and the extent of the installations.

This list begins with elevated and subway intramural railroads, the situations of which are so different from those of ordinary railroads that most students of the problem have paid little heed to the question of adapting the simple mechanical trips of these city railroads to the needs of heavy and mixed trunk-line service; but it is proper to include the city lines in this list, for two reasons: First, the main reason for classing the simple trip as available only on these city roads is that it is particularly susceptible to being interfered with by snow and frost; but the government now calls for installations where snow and frost do not make much trouble; and the adaptation of the principles of these trips to apparatus usable in cold climates has not as yet been thoroughly studied.

Second, the experience of the subways and the elevated lines should be availed of by all railroads in the matter of discipline of runners. One of the persistent arguments against the use of automatic train stops is that they will make, or tend to make, all enginemen careless. But officers of roads using the stops give strong testimony that the actual effect is exactly the other way; the stops make the men more careful. Testimony on this point on the Boston Elevated covers a period of over 20 years. The Chicago & Eastern Illinois, with its more varied traffic and different conditions, confirms the story of the Boston Elevated. An

important element in the successful operation of automatic stops on a busy line is the success or unsuccess) with which the enginemen maintain smooth and regular operation; and no road can afford to ignore the records of the years of successful operation on these city railroads, with their many hundreds of motormen.

In a second list, "List B," there are shown the names of roads on which experimental installations have been made. Of the 16 items in this list, five—Nos. 1, 6, 7, 13 and 15—have been the subject of recent published descriptions or news notes, as shown in the list. Item 12 refers to a recently reported contract, concerning which we have no detailed information. The other 10 refer to experiments which have been closed, or which have lain dormant for a considerable length of time.

"List C" is a rearrangement of the items given in "List B."

The most recent comprehensive publication relating to automatic train stops is the report of the Automatic Train Control Committee (A. M. Burt, chairman), of the United States Railroad Administration, which report was transmitted to the director-general of railroads on December 31, 1919, and abstracted in the *Railway Age* of January 16 and 30, 1920, pages 227 and 382. This report, hereinafter referred to as the Burt Report, gave the results of a thorough and intimate study made by a committee of seven, including six railroad officers and engineers, and W. P. Borland, chief of the Bureau of Safety of the Interstate Commerce Commission.

Besides analyzing and describing the different types of apparatus and giving brief descriptions of devices examined, the report, following its general conclusions, gives a comprehensive bibliography of the subject; and a list of 17 devices, more or less fully developed, which were deemed worthy of further tests. Eleven of these devices are noted in the tables which are printed herewith.

The report of this committee was extremely cautious, the most progressive paragraph being that to the effect that, on lines of heavy traffic, fully equipped with automatic block signals, the use of train control devices "is desirable." The committee recommended that after the termination of federal control of the railroads, its work should be continued by a committee of the American Railway Association; and such a committee was established. Of this committee, C. E. Denney, vice-president of the New York, Chicago & St. Louis, is chairman, and G. E. Ellis, Chicago, is secretary.

This last named committee, in conjunction with the Bureau of Safety of the Interstate Commerce Commission, issued a list of requisites for automatic train control which was noticed in the *Railway Age* of March 4, 1921.

LIST A—AUTOMATIC STOPS IN USE

- a Boston Elevated.—Stops in use over 20 years. Simple mechanical trip. Described in Signal Dictionary, pages 122-124.
- b Interborough Rapid Transit Co., New York—Subway and elevated lines. Simple mechanical trip. Described in Signal Dictionary, page 117.
- c Hudson & Manhattan (Subway).—New York and Jersey City. Same general type as above. Signal Dictionary, page 108.
- d Pennsylvania, New York City Terminal. Tunnels; also in unprotected situations. The Hill mechanical trip. Described in Bulletin No. 63 of the Union Switch & Signal Co., and in the *Signal Engineer* of January, 1912.
- e Brooklyn Rapid Transit Co. (N. Y.) Subway and elevated lines.
- f Chicago & Eastern Illinois.—Used on both passenger and freight trains over about 100 miles of line. Miller Train Control Corporation; apparatus described in the *Railway Age*, November 27, 1914.
- g Chesapeake & Ohio.—American Train Control Company; in use on about 20 miles, single track. Apparatus described in *Railway Age*, March 28, 1919. Ramp type.
- h Chicago, Rock Island & Pacific.—Regan Safety Devices Co. Described in *Railway Age*, April 30, 1920, page 1293. Ramp type, with speed control.

NOTE—The three last preceding installations have been under inspection during the past year by the Bureau of Safety of the Interstate Commerce Commission and the Train Stop Committee of the American Railway Association.

- i Cincinnati, Indianapolis & Western.—The Shadle automatic train control—intermittent electric contact type. *Railway Age*, October 1, 1920.

- j Washington Water Power Company. This is a trolley road; overhead automatic stops in use on 22 miles. Described in Signal Dictionary, page 112.
- k San Francisco-Oakland. Double track line, overhead trip. Signal Dictionary, page 113.

LIST B—AUTOMATIC TRAIN-STOP EXPERIMENTS

- 1 Buffalo, Rochester & Pittsburgh.—General Railway Signal Co., Induction apparatus; *Railway Age*, October 29, 1921, page 817.
- 2 Canadian Pacific.—Prentice "wireless" apparatus. *Railway Age*, June 23, 1911.
- 3 Chicago, Burlington & Quincy.—Golos automatic stop. *Railway Age*, March 21, 1916.
- 4 Delaware, Lackawanna & Western.—Wooding's train control. *Railway Age*, September 14, 1917, and November 9, 1917.
- 5 Interborough Rapid Transit Co.—G. P. Finnigan's induction apparatus. Described by J. M. Waldron in the *Railway Age*, June 16, 1911.
- 6 Erie.—International Signal Company's apparatus: Webb system. *Railway Age*, January 14, 1922, page 175.
- 7 New York Central.—Sprague induction system. *Railway Age*, November 26, 1921, page 1051.
- 8 New York Municipal Railways (Brooklyn Rapid Transit Co.) Elaborate speed control system, made by the General Railway Signal Co.; subjected to elaborate tests in 1916. Description in the *Signal Engineer*, August, 1915.
- 9 New York, New Haven & Hartford.—The Webb apparatus, noticed above, was subjected to extensive tests in 1917.
- 10 Pennsylvania (Western Lines).—Gray-Thurber system; tested by the Division of Safety, Interstate Commerce Commission, in 1914. Report submitted to Congress on January 9, 1915.
- 11 Philadelphia & Reading.—Schweyer's induction system. *Railway Age*, June 21 and July 5, 1918.
- 12 Pittsburgh & Lake Erie.—Union Switch & Signal Co.
- 13 Raritan River.—M-V All-weather train control. *Railway Age*, January 14, 1922, page 185.
- 14 Southern (C. N. O. & T. P.).—Julian-Beggs automatic speed control. *Railway Age*, March 21, 1916.
- 15 Southern Pacific.—National Safety Appliance Co. Experimental plant is now being installed between Hayward, Calif., and Halvern.
- 16 Western Pacific.—National Safety Appliance Company's induction apparatus subjected to extensive tests near Oroville, Cal. *Railway Age*, October 8, 1915.

LIST C—INDEX TO NAMES OF PROPRIETORS IN LISTS A AND B

NOTE—The numbers at the left refer to the position of the items in Table B, and the letters to Table A.

- .. Bostwick—See National Safety Appliance Company.
- 5 Finnigan—Interborough Rapid Transit Co.
- 1 General Railway Signal Co.—B. R. & P. Ry.
- 8 General Railway Signal Co.—B. R. T. Co. (N. Y. Municipal Railways.)
- 3 Golos—C. B. & Q. R. R.
- 10 Gray-Thurber—Pennsylvania
- 6 International Signal Co.—Erie and N. Y., N. H. & H.
- 14 Julian-Beggs—Southern.
- 13 M-V All-weather train control—Raritan River.
- f Miller—Chicago & Eastern Illinois.
- 16 National Safety Appliance Co.—Western Pacific.
- 15 National Safety Appliance Co.—Southern Pacific.
- 2 Prentice—Canadian Pacific.
- h Regan—Chicago, Rock Island & Pacific.
- 11 Schweyer—Philadelphia & Reading.
- i Shadle—Cincinnati, Indianapolis & Western.
- 7 Sprague—New York Central.
- 12 Union Switch & Signal Co.—Pittsburgh & Lake Erie.
- 6 Webb (See International Signal Co.)
- 4 Wooding—Delaware, Lackawanna & Western.

The devices named by the Burt Committee, December, 1919, as available for test, were as follows: In Table A, items f, g, h, i; in Table B, items 1, 4, 6, 7, 11, 12, 15.

The following references to the *Railway Age* will be of interest to those who may wish to examine the subject of cab signals, some of the details of which are of value in connection with the automatic stop problem:

- 1. May 7, 1920, Description of Augereau's wireless cab signal, as installed in France.
- 2. July 2, 1920. Page 29. Historical review of cab signal experiences in Europe, by Louis Weissenbruch, secretary of the International Railway Association.
- 3. March 4 and 18, 1921. Report of New York State Public Service Commission on automatic stops.
- 4. April 22, 1921. J. B. Latimer on automatic stops and audible signals.
- 5. December 3, 1921; page 1119. Recent improvements in cab signals in France.

Matter supplementary to the above mentioned article by Mr. Weissenbruch may be found in a paper by F. Maison, in the Bulletin of the International Railway Association for November, 1921. Mr. Maison's paper has been prepared for the International Railway Congress which is to be held in Rome next April. It fills about ninety pages of the Bulletin. Like Mr. Weissenbruch's paper, it covers experiences terminating about 1914; and the author promises a second paper dealing with developments in this field since 1914.

Shippers Urge Reductions in Freight Rates

Program Provides for Testimony as to Various Groups of Commodities and on Behalf of Public and Labor

WASHINGTON, D. C.

THE RATE HEARING before the Interstate Commerce Commission since January 19 has been devoted to testimony of shippers as to particular commodities, beginning with coal and coke on January 19 and 20, and ore, furnace materials and iron and steel articles on January 21 and 23, and sand and gravel, brick, lime, cement, gypsum and asphalt on January 24 and 25. A revised schedule of dates for the hearing as to various commodities has been published, which devotes four days, January 30 to February 4, to testimony of the public and shippers as to general aspects of the case. It is understood that during this period Secretary of Commerce Hoover and Walker D. Hines, former director general of railroads, will appear. February 10-11 has been set aside for the railway labor organizations.

The other dates for commodities are as follows: January 26-27, lumber and forest products; January 28, fertilizers and materials, sulphuric acid, phosphate rock; February 8, vegetable oil and soap; February 9, grain, flour and agricultural products; February 15, canned goods and wholesale groceries; February 16, fruits and vegetables; February 18, milk, cream and dairy products; February 20, beverages and beverage containers; waste material; February 21-22, livestock and packing house products; February 23-24, petroleum and petroleum products; February 25, other commodities. Announcement will be made later of dates for carriers' rebuttal evidence and for oral argument. In beginning the commodity testimony Commissioner Hall asked the witnesses to bear in mind that the investigation is not being held for the purpose of going into questions of relationships, differentials, etc.

Coal

J. D. Morrow, vice-president of the National Coal Association, the first witness on behalf of shippers, urged a heavy nation-wide cut in freight rates on coal as a means of lowering the cost to the ultimate consumer and improving the economic position of the nation as the first to be made if the commission finds that any rate reductions are warranted. He said, however, that the association does not have a sufficient knowledge of the details of the carriers' finances to attempt to say whether rates generally can be reduced or to what extent, and it is entirely satisfied to leave the determination of that question to the commission.

"We feel," he said, "that the position of bituminous coal in the economic life of the nation is such that under present circumstances the rates on this commodity deserve special consideration. Our position is that material reductions in these rates should reduce the unit operating expenses of the carriers and tend to increase their traffic. Moreover, we are convinced that such rate reductions are necessary to the revival of business and industry, upon which the carriers must depend primarily for increased revenue. Although not an issue here, the inflated wage scales in the mines and upon the railroads are an important part of these economic conditions and I would not feel that I had stated clearly the position of the bituminous coal producers as I understand it, did I not recognize that fact and state it as the conviction of these men that such inflated wage scales on the roads and in the mines must be readjusted. I wish it clearly understood at the outset that the National Coal Association wants the carriers to receive a fair and adequate return, not only because such return is just to them, but because it is even more essential to the prosperity of the United States

and the welfare of its citizens. We approach this inquiry with every desire to give full weight to the requirements of the carriers' financial position."

Although not definitely suggesting what particular cut in rates the railroads ought to make, Mr. Morrow said that through the savings to the carriers in fuel coal alone, and making allowance for the saving in freight rates on their own fuel coal, the railroads undoubtedly would be justified in making a reduction of 75 cents a ton, although, he said, it might be only 50 cents. Mr. Morrow also referred to the reductions in prices of some of the other materials used by the railroads, but said he did not wish to over-estimate the extent of such reductions, because he was not familiar with the financial position of the producers and manufacturers of railway supplies nor with their ability to pass on the full measure of any reduction in their production costs.

When Mr. Morrow had urged a reduction in export coal rates, Commissioner Hall remarked that it seems to be "a little strong" to say that the rail rate is the main cause of the loss of export business. It remains to be demonstrated, he said, whether a reduction of the rail rate to nothing at all would be sufficient to enable the American producers to compete with foreign coal.

Mr. Morrow cited figures showing that the railroads are paying considerably less for bituminous coal than for months past and quoted witnesses for the carriers as admitting that their fuel costs for the coming year, particularly for the coal year beginning April 1 next, after wage readjustments are made in the unionized coal mines, will be considerably lower than for the past year.

As indicating the excessive freight charge on haulage of coal today, Mr. Morrow pointed out that the average rate per ton is \$2.27, as against an average sales price at the bituminous mines of \$2.13 a ton, or 14 cents higher than the cost of the coal.

"The freight charge of \$150 or \$200 on a car of coal which can be bought at the mines for from \$50 to \$100," said Mr. Morrow, "shows on its face the disproportion between the transportation cost and the market value of the commodity."

"Doubling the freight rate on a carload of motor cars, for example, from Detroit to Washington between 1914 and 1922, added only \$15 or \$20 to the price of a car selling at approximately \$1,000 to \$1,500. Such a condition makes no material difference to the customer who is ready to pay \$1,000 for a motor car, but an increase of \$50 or \$100 a car on coal which is being sold at the mines for less than the transportation charge on that coal to destination, will quite obviously have a deterrent effect upon the consumer of that coal who expects to use it in industrial establishments."

To make plain the relation of the transportation charges to the present high price of delivered coal, Mr. Morrow stated that 48½ per cent of each dollar paid for coal ordered by the manufacturer goes to the operator, out of which all his costs must come, while 51½ per cent goes to pay the freight on the coal.

Mr. Morrow quoted from reports just obtained by the National Coal Association from operators with 55,460,000 tons of bituminous tonnage during the 7 months from April 1 to October 31, 1921, showing that during those months there was an average loss of 2 cents a ton, while the reports for November and December showed even further losses.

Mr. Morrow pointed out that, while wage cuts in the union mines "would result in some lowering" of the mine price of coal, still the effect of such reductions already has

been discounted in several fields through reductions in the mine price to meet lower wage and mine prices in competing non-union fields.

George H. Cushing, managing director of the American Wholesale Coal Association, said the present rates on coal are not necessary to allow the railroads to collect the needed revenues and he produced voluminous statistics to show that with a normal tonnage the railroads could stand a reduction of 13.87 per cent of their revenues and still earn 6 per cent on their value. Rates that will do this, he said, are unreasonably high, and he did not understand that the carriers contend for a schedule of rates so high that they can earn 6 per cent in years of depression. The rates, Mr. Cushing contended, should be no higher than 50 per cent above the rates of April, 1917.

Mr. Cushing attempted to predict the future traffic of the carriers by estimating a continued increase in coal production based on an analysis of the recovery after periods of depression in the past and then declared that the statistics indicate that the growth of coal production measures precisely the expansion of all business. The figures of the American Coal Association show, he said, that for each car of coal loaded, the railways load a fraction more than three cars of all freight other than coal. In addition to a general reduction of coal rates, he said, the rates now applying on export coal are unreasonable to the extent of \$1 a ton, that in any readjustment of rates the differentials as between producing districts which obtained on April 6, 1917, should be preserved and that reconsignment and demurrage charges should be reduced.

Mr. Cushing said the railways have a reasonable expectancy of business arising from the fact that the business of the country is likely to continue to grow, that the railways are by law guaranteed against those fluctuations of earnings which formerly arose from competitive rates and that this expectancy of steadily increasing business at stable rates is a sufficient guarantee for any business concern.

Mr. Morrow and Mr. Cushing were recalled by the commission to discuss the question of seasonal coal rates or any other method of equalizing the production of coal throughout the year. Both expressed the opinion that it would take more than a difference in the freight rate to overcome the conditions which lead consumers to buy coal in general only as they need it and that the only solution of the problem of seasonal fluctuations is to find a way to equalize the need for coal. Mr. Cushing said the coal industry had always made seasonal coal prices but they had had little effect in encouraging people to buy coal when they didn't want it. Mr. Cushing said that the need of industry for coal is largely controlled by the seasonal buying power of the farmer. Both expressed the opinion that they would prefer to have the present freight rates and good railroad service than lower rates and an inferior service.

H. W. Prickett of Salt Lake City, on behalf of Utah and Wyoming coal producers, said that water-borne coal from Australia and from Cardiff is being sold at San Francisco and other coast cities at \$7.50 to \$8.00 a ton, whereas the rail rate alone from Utah to San Francisco is \$7.25. When A. P. Humburg, commerce attorney of the Illinois Central, said the rate had been reduced to \$6, Mr. Prickett said the reduction was still under suspension.

A. H. Campbell, traffic manager of the International Paper Company, urged a reduction in the rates on coal, which he said had become so burdensome that his company had converted two of its mills in Maine to oil-burning. His company pays over a million dollars a year in freight and coal alone, he said, and the rates are now close to 250 per cent of the mine price of coal.

E. L. Kelley, representing the state of North Dakota, said the present rates on coal are excessive and unreasonable.

W. J. Thompson, secretary of the Anthracite Producers'

Association, said that present prices of anthracite are too high for the average consumer to pay. The anthracite producers, he said, "gravely doubt" that general rate reductions would restore general prosperity, but consider that freight rates on their product should be lowered to nearer the rates on bituminous.

Iron, Steel and Ore

Shippers of iron and steel articles in general asked for an elimination of the increases made by the commission in Ex Parte 74, although most of them disclaimed any intention to deprive the carriers of adequate revenues. M. D. Langhorne, speaking for the Virginia Pig Iron Association, declared that every blast furnace and ore mine in his state is closed down because they cannot operate without losing from \$4 to \$5 on each ton of pig iron produced. He said that if rates on basic commodities should be reduced, the movement will be so stimulated that the carriers will receive a larger net revenue than they are receiving at present. A. G. MacKenzie, testifying on behalf of the Utah chapter of the American Mining Congress, said that freight rates constitute 22 per cent of the cost of producing the metals that come from the mines in Utah, which are now operating at about 28 per cent of capacity. Every item of cost of production had been reduced, he said, except freight rates.

J. A. Topping, chairman of the Republic Iron & Steel Company, appeared as spokesman for 40 independent iron and steel manufacturers. He said that excessive freight rates, like excessive prices for iron and steel, were both the outgrowth of war conditions. The manufacturers have taken steps to bring about liquidation and deflation and they believe that freight reductions are essential to a normal consumption of iron and steel. He recognized that the problem is whether the cost of conducting transportation can be reduced sufficiently and that this is largely a labor question. Yet, he said, this item has hardly been touched. The reduction in railroad wages has amounted to only about 12 per cent while the wages of most other labor have been reduced from 30 to 50 per cent. He said that if the Adamson law stands in the way, its repeal should be urged in the public interest and he advocated making the Railroad Labor Board subject to the orders of the Interstate Commerce Commission on the principle that two boards dealing with the same subject or parts of the same subject cause only confusion. Specifically, Mr. Topping advocated the cancellation of the increases made in Ex Parte 74, and such other adjustments as might appear equitable upon the completion of the commission's investigation. He thought that with special readjustments the volume of tonnage would be increased to such an extent that there would be no material shortage in the net revenue of the carriers below a fair return.

Cancellation of the increases made in Ex Parte 74 was also advocated by F. A. Ogden, general freight agent of the Jones & Laughlin Steel Company; Robert Hula for the independent plants in the Chicago district, and L. C. Bihler, traffic manager of the Carnegie Steel Company, who appeared also for the American Steel & Wire Company, American Sheet & Tin Plate Company, American Bridge Company and the Lorain Steel Company.

"We feel," said Mr. Bihler, "that the iron and steel industry has long borne and is still bearing more than its proper share of transportation charges and, therefore, in connection with any reductions in rates, special consideration should be given to specific reductions on all the inbound raw materials and the outbound products, pig iron and furnace products, semi-finished and finished products of the mills." He said that the iron and steel industry has done its full share in bringing about liquidation and that a restoration of normal conditions in this industry will almost double the number of people employed directly, in addition to the increased employment in related industries.

I. C. C. Finds Hardwood Lumber Rates Unreasonable

Six Commissioners Favor Slight Reduction, Two for Larger Reductions and Three Disapprove of Any

WASHINGTON, D. C.

THE WIDE DIFFERENCES of opinion which exist among the members of the Interstate Commerce Commission as to how rates ought to be reduced are strikingly illustrated in the report made public on January 20 in the Southern hardwood lumber case, the third important case in which the commission has prescribed rate reductions since its order in Ex Parte 74. The majority report, which represents the views of 6 of the 11 commissioners, finds that the rates on hardwood lumber and forest products from points in Missouri, Arkansas, Texas, Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina, Virginia, West Virginia, Tennessee and Kentucky to central territory and other defined territories north of the Ohio river are and will be for the future unreasonable to the extent that they exceed the rates in effect August 25, 1920, by more than the amounts shown in a table in the report, which range from 6 to 11 cents per 100 pounds.

As in the reports in the western livestock and hay and grain cases, no order was issued, but the report says the carriers will be expected to file and make effective rates in accordance with the findings made not later than March 6, by publication upon not less than 10 days' notice.

In the hay and grain case, after the railroads had failed to file the tariffs by the date named, a formal order was issued for a later date.

Two Dissenting Opinions

There were two concurring and two dissenting opinions. Chairman McChord said he concurred in the conclusions reached by the majority as far as they go, but thought they fell short of substantial justice to the shippers, and to his mind the commission should issue an order prescribing more substantial reductions. Commissioner Campbell subscribed to Mr. McChord's views.

Commissioner Potter concurred in the report with respect only to reductions of rates to points where such reductions make for a restoration of relationships as they existed prior to August 26, 1920, while Commissioner Daniels filed a dissenting opinion, objecting that the finding was based on "inadequate and tenuous grounds" and is "particularly unfortunate because it comes at a time when we are conducting a general investigation to determine whether we may lawfully require further rate reductions than those already made, not including this, and without awaiting the outcome of that inquiry."

Commissioner Eastman also dissented, saying that while the reductions are not large in amount and while he agreed that the restoration of rate differences as they existed prior to August 26, 1920, is desirable, it does not seem to him that this proves that the rates assailed are unreasonable.

Those who presumably favored the majority report, therefore, were Commissioners Cox (who is named as the author of the report), Aitchison, Esch, Hall, Lewis and Meyer. Commissioner Aitchison was recently attacked in a speech in the Senate by Senator Trammell of Florida who said that Mr. Aitchison had tried to bring the case to a vote at a time when two commissioners were absent and it appeared that a majority of those present would oppose a reduction in the rates. This speech was also made the occasion of a protest by a number of Southern senators because the President had not given the South additional representation upon the commission, although Chairman McChord is from Kentucky, and Senator Trammell introduced a bill to provide

for a geographical distribution of commissioners in future appointments.

Pending Since October 10

The case has been pending before the commission since October 10 and the report is dated January 16. The complaint was initiated by the Southern Hardwood Traffic Association and other hardwood interests intervened in support of the complaint, which attacked as unreasonable the rates on hardwood logs, bolts, billets and other rough material between points in the South, and as unreasonable, unjustly discriminatory and unduly prejudicial, the rates on hardwood lumber and other hardwood forest products taking lumber rates or arbitraries higher from points in the states named to the Ohio river crossings and to destinations beyond. The general rate level was assailed rather than individual rates, it being alleged that the increases since June 24, 1918, have resulted in transportation charges greater than the traffic can bear and in undue prejudice to complainants and undue preference of competing shippers in Wisconsin, Michigan and other northern states because of the widening of the spread in favor of such competing points, resulting from percentage increases in rates. Later that part of the complaint dealing with logs was withdrawn.

The report says the hardwood industry of the South is in a state of prostration. While there was a considerable falling off during 1921 in the hardwood lumber movement, it was represented that loss of traffic in the near future may be still greater because the logging operations have been greatly curtailed. Complainants did not seriously contend that the increases in freight rates alone are the cause of the business depression as it affects them, but admitted the fact of lessened demand and rapidly falling prices. To meet the changed market conditions, they had made substantial reductions in their operating costs. The commission says that the admission that transportation charges cannot be said to have caused the present condition of the industry is confirmed by the fact that prices of hardwood lumber at such a destination point as Cincinnati were, generally speaking, materially lower after the freight rate increases of August 26, 1920, than immediately prior thereto. The plea for the removal of the 1920 increases was based primarily on the effect of percentage increases on long haul traffic. The report continues in part:

"Defendants oppose the reductions sought primarily because of their own unfavorable financial condition and secondarily because, in their judgment, the rates assailed are not unreasonable and are not responsible for the present plight of complainants. The testimony shows that more hardwood moved from certain points in the south during selected periods of 1921 than moved during corresponding periods in 1920. As previously indicated, however, the increased movement during 1921 may be attributed, at least in part, to the fact that large stocks of lumber were on hand at the beginning of the year and also to unexpired contracts previously entered into. . . .

Conditions in Hardwood Industry Not Encouraging

"While the figures reflect a rather unfavorable financial condition of the defendants, this fact does not preclude us from finding particular rates or rates on particular commodities to be unreasonable when the facts are sufficient to justify such a finding.

"The present financial condition and business outlook of

the southern hardwood industry are far from encouraging. Defendants insist that this condition has resulted largely from stagnation in building and general business depression as well as from the increased use in recent years of cement and other lumber substitutes and is not the result of increased freight rates. On the other hand, as already pointed out, there is considerable testimony to the effect that if the reductions sought are established many of the lumber mills would resume operations. Complainants urge that the situation here is similar to that in *Rates on Grain, Grain Products, and Hay*, 64 I. C. C., 85, but the fact must not be overlooked that the carriers in the western district, which was principally affected by our decision in the *Grain Case*, were earning a return somewhat in excess of the return to which they were entitled under the transportation act, 1920, whereas the carriers principally affected in the present case are and have been earning as a whole substantially less than the return to which they are entitled under the law. Nevertheless it does not necessarily follow that the present earnings on hardwood lumber are properly adjusted to the aggregate earnings of the region, or that some readjustment may not be reasonable.

"The percentage increases, as applied to rates on hardwood lumber from points on defendants' lines to points in western trunk line, central freight, and eastern trunk line territories have to a considerable extent disturbed the relationship of rates between the more distant hardwood-producing points of the South and the comparatively near-by producing points of Michigan, Wisconsin, and other northern states. Manifestly this disturbance has been greater at some points than at others and the present record is inadequate for determination of the precise extent to which this disturbance has resulted at all destination points involved. In the basis which we prescribe herein, consideration has been given to the measure of the rates and also to a contraction of the spread between the rates from northern and southern producing points to common markets, with a view to making the spread for the future bear a closer relationship to that which existed prior to August 26, 1920. A revision of rates on hardwood lumber from southern points may stimulate the movement from those points to the destination territory described, and thereby increase rather than diminish the net revenue of the southern carriers."

Concurring and Dissenting Opinions

Commissioner McChord, in stating that he would approve more substantial reductions, said that conceding that there may still be some play of other economic factors in the situation, it is manifestly antagonistic to the interests of both carriers and producers to maintain rates at levels that tend to curb rather than to stimulate a flow of traffic. Commissioner Potter expressed the opinion that the complainants are entitled to reductions necessary to restore relationships and without regard to the other circumstances mentioned in the report, his thought being that the disproportionate increases by percentages of the long haul rates have, under existing conditions, become unjust and unreasonable and, therefore, the resulting rates are not just and reasonable.

Commissioner Daniels said that the sweeping finding of unreasonableness is not supported in the report by any citation of ton-mile earnings. If the rates prescribed were to be applied universally on lumber and forest products, the effect on carrier revenue might well prove revolutionary. No evidence of record is cited in the report, he says, that shows or tends to show that the rates reduced are unreasonable from the standpoint of earnings and on the showing made, the commission must be confronted with complaints from hardwood producers in the Northwest and Central Freight Association territory for corresponding reductions in their rates. The indeterminate standards of reasonableness on rates from the South, set up by this report, necessarily extend in their influence to all forest products from the South and this in

turn affects all from the Pacific Coast and Inland Empire which will bring into direct issue the rates from Wisconsin and Michigan and reduction there will start the wheel revolving again. Continuing, he says:

"The commission thus in effect sets up a criterion of reasonableness which is impossible of application unless it be assumed that all rates in this country were reasonable on some past date. August 25, 1920, is the date taken here, although on that date all the general percentage increases had been made except that under *Ex Parte 74*. Logically we should go back to the fore part of 1914, and starting from that must find that every percentage increase was unlawful to the extent that it changed the difference in amounts per unit between rates for longer and shorter hauls. It is of the essence of percentage increase that it should do that very thing. I am unable to accept the doctrine that every carrier which has made percentage increases under our express authorization will violate the law in maintaining the rates so established, and this report is bedded on that doctrine, whether consciously or not.

"The findings in the report are really less serious in their immediate effect on carrier revenue than in their prospective effect on future rate adjustments generally. There seems not unlikely an eventual equilibrium of general prices perhaps 50 per cent over the prewar level. To the new level, whatever it be, an adjustment must eventually be made. But until carriers' costs have been adjusted thereto, the reduction in rates, if it outruns the contemporaneous reduction in expenses, means progressive inability to meet the needs of traffic, indefinite postponement of securing additions and betterments which the normal growth of traffic renders indispensable, and will only intensify the distress that is certain to come, if and when industry again resumes its normal stride. For this reason it is imperative that reductions which we require should be made upon a carefully reasoned program, and not upon such inadequate and tenuous grounds as we here cite for our action."

Freight Car Loading in 1921

WASHINGTON, D. C.

THE NUMBER of freight cars loaded with revenue freight during the year 1921 was 39,037,817 as compared with 45,118,863 in 1920, 42,180,328 in 1919 and 44,755,041 in 1918, according to a compilation just made by the Car Service Division of the American Railway Association of the weekly reports made to it by the railroads. The 1921 figures represent a decrease of 13.7 per cent as compared with 1920, of 7.4 per cent as compared with 1919 and of 12.8 per cent as compared with 1918.

The average loading of freight per car in 1921 was slightly less than in 1920, due to the fact that since there were plenty of cars available throughout the year the shippers were less inclined to load cars heavily. Therefore, the actual reduction in the volume of freight handled was somewhat less than is indicated by the car loading figures. The statistics of ton miles of freight handled are available only for the first 10 months of 1921. For that period the reduction as compared with 1920 was 23 per cent.

The loading of grain and grain products in 1921 was greater than that for previous years, 2,281,852 cars as compared with 1,843,018 in 1920 and 2,048,968 in 1919.

The loading of less than carload merchandise was also much greater than for the preceding years, 10,677,226 cars as compared with 9,017,074 in 1920 and 3,165,619 in 1919.

The loading of other classes of freight, however, showed decreases as compared with 1920 and in most cases as compared with 1919 also. Livestock loading was less than for the two previous years, 1,495,344 cars as compared with 1,553,424 in 1920 and 1,732,852 in 1919. Coal loading was

also much less than in the two preceding years, 7,934,048 cars as compared with 10,082,450 in 1920 and 8,829,883 in 1919.

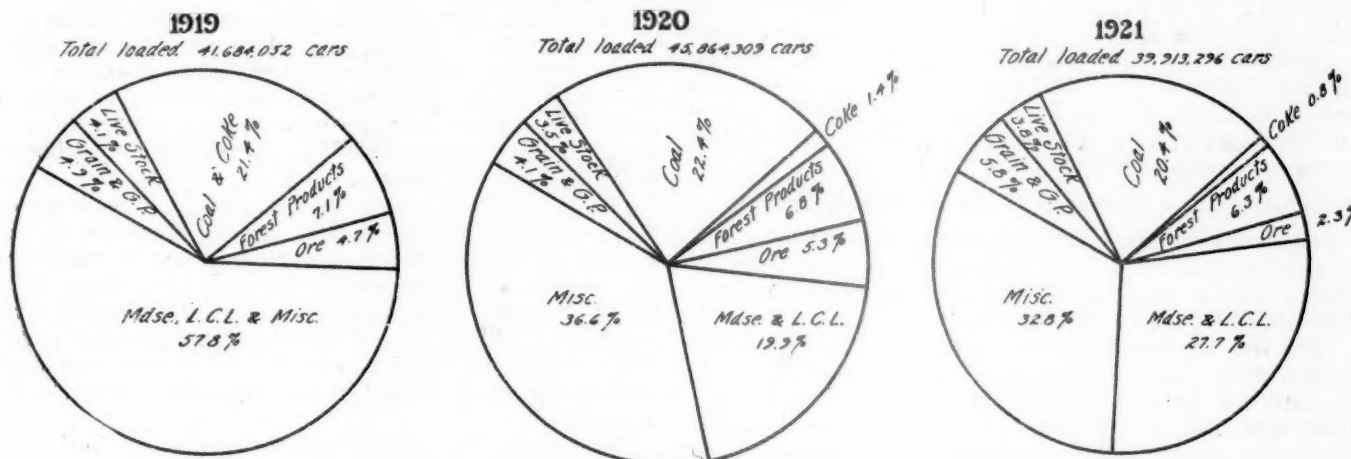
The number of cars of coke loaded was 303,898 as compared with 648,902 in 1920 and 225,517 in 1919; of forest products, 2,483,079 as compared with 3,056,923 in 1920 and 2,988,807 in 1919; of ore, 904,513 as compared with 2,413,893 in 1920 and 1,949,909 in 1919, and of miscellaneous freight, 12,957,857 as compared with 16,503,179 in 1920 and 21,201,811 in 1919.

Reports received by the Car Service Division of the American Railway Association show that 720,877 cars were

Coal also showed an increase of 22,263 cars over the previous week, the total being 159,245, but this was 23,551 cars less than during the same week last year. Reports showed 36,165 cars loaded with livestock, an increase within a week of 10,507 and 1,000 more than during the corresponding week of 1921. Loadings of grain and grain products amounted to 50,187 cars, an increase of 9,514 cars over the previous week and 4,702 more than the same week last year. It also was an increase of 9,367 over the corresponding week in 1920.

Forest products with a total of 48,490 cars showed an increase of 7,419 over the previous week and 3,876 more

REVENUE FREIGHT LOADED



loaded with revenue freight during the week ending January 14. This was an increase of 114,885 cars over the week before, which was, however, a holiday week owing to the observance of New Year's day.

The total was an increase of 5,022 cars over the corresponding week in 1921, but 119,647 cars less than for the corresponding week in 1920.

Loading of merchandise and miscellaneous freight amounted to 415,081 cars, an increase over the week before of 64,802 cars and 27,328 cars more than were loaded during the corresponding week in 1921. It was, however, 57,660 less than were loaded during the corresponding week in 1920.

than during the same week in 1921. It was, however, less than in 1920. Ore loading increased 130 cars within a week to a total of 4,451 cars while coke totaled 7,258 cars or an increase of 250 cars over the week before.

Compared by districts, increases over the corresponding week in 1921 in the loading of all commodities were reported in all except the Allegheny, Central and Southwestern districts which showed decreases.

The freight car surplus for the period ending January 15 showed a considerable decrease over the previous week, amounting to 439,982, of which 190,180 were box cars, and 195,284 were coal cars.

REVENUE FREIGHT LOADED FOR WEEK ENDED SATURDAY, JANUARY 7, 1922

| District | Year | Total revenue freight loaded | | | | | | | | | |
|-------------------|------|------------------------------|------------|---------|--------|-----------------|--------|--------------|---------------|-----------------|--------------------------|
| | | Grain and grain products | Live stock | Coal | Coke | Forest products | Ore | Mdse. L.C.L. | Miscellaneous | This year, 1922 | Corresponding year, 1921 |
| Eastern | 1922 | 6,644 | 2,662 | 32,999 | 1,675 | 4,316 | 792 | 48,022 | 49,286 | 146,396 | 158,365 |
| | 1921 | 5,182 | 3,682 | 49,491 | 1,657 | 6,766 | 1,725 | 39,526 | 50,336 | 122,638 | 149,908 |
| Allegheny | 1922 | 2,845 | 3,021 | 38,079 | 3,410 | 2,389 | 1,164 | 33,765 | 37,965 | 122,638 | 149,908 |
| | 1921 | 1,760 | 3,786 | 55,814 | 6,174 | 2,940 | 2,122 | 32,942 | 44,370 | 122,638 | 149,908 |
| Pocahontas | 1922 | 304 | 69 | 17,200 | 197 | 869 | 26 | 4,341 | 2,341 | 25,347 | 33,025 |
| | 1921 | 156 | 142 | 24,345 | 610 | 1,091 | 63 | 4,174 | 2,444 | 25,347 | 33,025 |
| Southern | 1922 | 3,666 | 2,048 | 19,751 | 423 | 13,117 | 568 | 29,549 | 26,419 | 95,541 | 101,932 |
| | 1921 | 3,018 | 2,032 | 26,794 | 807 | 11,486 | 2,052 | 28,964 | 26,779 | 95,541 | 101,932 |
| Northwestern | 1922 | 12,321 | 7,473 | 8,103 | 974 | 10,713 | 309 | 19,138 | 18,995 | 78,026 | 87,498 |
| | 1921 | 11,304 | 9,162 | 6,205 | 1,237 | 10,185 | 925 | 21,652 | 26,828 | 78,026 | 87,498 |
| Central Western | 1922 | 10,840 | 8,446 | 17,645 | 212 | 3,825 | 772 | 23,969 | 24,660 | 90,369 | 109,717 |
| | 1921 | 12,839 | 10,479 | 22,936 | 297 | 2,991 | 2,105 | 26,213 | 31,857 | 90,369 | 109,717 |
| Southwestern | 1922 | 4,053 | 1,939 | 3,205 | 117 | 5,842 | 690 | 13,002 | 18,827 | 47,675 | 57,196 |
| | 1921 | 4,829 | 1,844 | 5,648 | 89 | 5,943 | 464 | 14,778 | 23,601 | 47,675 | 57,196 |
| Total all roads | 1922 | 40,673 | 25,658 | 136,982 | 7,008 | 41,071 | 4,321 | 171,786 | 178,493 | 605,992 | 697,641 |
| | 1921 | 39,088 | 31,127 | 191,233 | 10,871 | 41,402 | 9,456 | 168,249 | 206,215 | 605,992 | 697,641 |
| | 1920 | 40,855 | 37,386 | 209,338 | 10,399 | 58,565 | 10,252 | 142,006 | 321,872 | 605,992 | 697,641 |
| Increase compared | 1921 | 1,585 | ..... | ..... | ..... | ..... | ..... | 3,537 | ..... | 91,649 | ..... |
| Decrease compared | 1921 | ..... | 5,469 | 54,251 | 3,863 | 331 | 5,135 | ..... | 27,722 | ..... | ..... |
| Increase compared | 1920 | ..... | ..... | ..... | ..... | ..... | ..... | 29,780 | ..... | ..... | ..... |
| Decrease compared | 1920 | 182 | 11,728 | 72,356 | 3,391 | 17,494 | 5,931 | ..... | 143,379 | 224,681 | 830,673 |
| January 7 | 1922 | 40,673 | 25,658 | 136,982 | 7,008 | 41,071 | 4,321 | 171,786 | 178,493 | 605,992 | 697,641 |
| December 31 | 1921 | 30,075 | 24,567 | 105,662 | 6,424 | 31,406 | 4,883 | 170,061 | 157,956 | 531,034 | 602,368 |
| December 24 | 1921 | 36,793 | 22,958 | 135,852 | 7,140 | 45,518 | 5,489 | 210,929 | 201,248 | 665,927 | 648,406 |
| December 17 | 1921 | 47,383 | 33,861 | 134,842 | 7,145 | 48,690 | 5,535 | 221,163 | 228,384 | 727,003 | 802,271 |
| December 10 | 1921 | 48,680 | 32,159 | 137,836 | 6,638 | 49,744 | 6,128 | 225,718 | 236,023 | 742,926 | 837,953 |

Toronto Electrification Disapproved by Canadian Commission

A PLAN for establishing a system of radial electric lines extending in several directions from Toronto has been investigated and disapproved by the commission appointed to inquire into hydro-electric railways. The majority report opposing the plan as presented is signed by four commissioners while the minority report approving it is signed by one.

The railroads included in the proposal are spoken of as the hydro-radials and include a total of 325 miles of line. This total is divided among five radial lines varying in length from 44 to 83 miles, including one line which runs from Toronto to Niagara Falls. A part of these lines are to be built, while some are already in existence, owned by private corporations or by the Dominion government, and operated by the Canadian National Railways. Agreements are proposed for the interchange of freight and for operating over the tracks of other railroads at certain points. The project involves an expenditure of about \$45,000,000.

Outstanding Features of the Proposed Project

The hydro-radials, as proposed in the plan, are to be constructed and operated under co-operative public ownership. Power is to be obtained from Niagara Falls and from other hydro-electric plants in the vicinity.

The type of electric railway proposed is a counterpart of a high class steam road operating between large cities. It is proposed to combine the interurban passenger business with the shorter suburban and in some instances local city services, all for passenger transportation, with freight business, doing heavy carload service along with the lighter l. c. l. business; and express service. These additional classes are proposed to be superimposed upon an interurban railway, thus loading it to a capacity limited only by the practical operating conditions of its various lines.

The area proposed to be served by the projected system is not only the most populous in Ontario, but to some extent surrounds and is tributary to the capital city, with its population of over half a million. There have been no recent developments of suburban service by the steam roads in Toronto, and this has doubtless had a strong influence towards encouraging the project of hydro-radials.

Findings of the Commission

The commission was appointed under Order-in-Council and was directed to inquire into and report on the whole question of hydro electric railways and all matters which in the opinion of the commissioners were relevant thereto. It was also directed to make such suggestions and recommendations as might be deemed desirable.

Various matters having a bearing on the subject were raised and discussed and the findings of the commission, as published in the majority report, are as follows:

(1) "The financial condition of electric railways in Ontario and the United States in and prior to 1920 has been so precarious and unsatisfactory, and the outlook for improvement so dubious and discouraging, that the construction of the proposed system of electric railways should not, in our judgment, be entered upon unless the evidence of competent operating experts fully justified the conclusion that they will be self-supporting.

(2) "Upon full consideration of the evidence, and the proper weight to be given to the witness, we are of opinion that the proposed electric railways would not be self-supporting.

(3) "We are further of opinion that the construction of the proposed electric railways, paralleling and competing as they would with the Canadian National Railway System, would be unwise and economically unsound, and would strike

a serious blow at the success of government ownership.

(4) "We are further of opinion that until the Chippawa power scheme, now estimated to cost \$60,000,000 or upwards, is completed and has been in operation for sufficient length of time to be self-supporting, the Province would not be justified in endorsing the construction of an electric railway system at an initial estimated cost of \$45,000,000.

(5) "We are further of opinion that the endorsement by the Province of bonds of the Hydro Electric Power Commission for systems of electric railways in various parts of the Province, at the instance of the municipalities concerned, is highly dangerous and may lead the Province into great financial difficulties. The endorsement for one locality would give rise to demands for the like accommodation for other localities, which it will be hard for any government to refuse, and might result in the Province being drawn into serious financial liabilities, and we would therefore suggest that government endorsement of such bonds should be discontinued. To the risk involved in accommodation endorsements, it is no answer to say that they are mere matters of form involving no real liability. Individual and corporate experience is to the contrary.

(6) "Further, we are of opinion that the expenditure of \$25,000,000 on improvement of public highways in the Province having been begun, it would be unwise to commence the construction of the electric railways in question until the effect in the improvement of these highways has been ascertained, and the use of them by motor cars and motor trucks (whose competition with electric railways has been found so keen and difficult to meet elsewhere) made clearly apparent.

(7) "We are further of opinion that the rapidly increasing debts and financial commitments of the Dominion, Province and municipalities have aroused well-founded apprehension in the minds of thoughtful citizens, and are a cogent reason against the embarkation at this time in the construction of the contemplated electric railways."

The opinion is also expressed by the railway commission that the Hydro Electric Power Commission of Ontario made a fundamental error when preparing the original estimates, which was repeated when the supplementary estimates were prepared, in not seeking and securing the assistance of experienced operating men, particularly insofar as operating costs and possible revenues were concerned.

Alternative Suggestions

As the situation in the city of Toronto naturally separated itself from the rest of the project in the province, the commission deemed that it should be treated as a purely local problem and worked out with the view that the city of Toronto should undertake the construction and operation as a municipal enterprise co-ordinated with other undertakings of a similar nature now in hand. This alternative suggestion crystallizes into a purely radial scheme based on Toronto. The term "radial" which was applied to the hydro-radial railway project had its inception in Toronto, where it is particularly applicable, and appears to have grown outward from its center.

The commission states that in general such a Toronto radial scheme, as it might be worked out, appears to offer various advantages. It would, states the report, supply an opportunity for a truly "radial" system of railways operating into the city from a suburban belt up to say 10 or 15 miles radius.

Such a unified transportation system, according to the report, would enable the Civic Commission to work out its own plans in conjunction with the problem of the street railway proper when taken over, and would not put it in the position of being a competitor with another transportation system operating within its area, such as the hydro-radials might be.

Walker D. Hines Reviews Federal Control Period

Before Senate Committee Former Director General Replies to Criticisms of Railroad Administration Policies

WASHINGTON, D. C.

WALKER D. HINES, formerly director general of railroads, testified before the Senate Committee on Interstate Commerce on January 24 at the request of the committee, in connection with its general investigation of the railroad situation, presenting an extended statement reviewing some of the principal developments of the federal control period. Mr. Hines devoted particular attention to answering criticisms of the government's administration of the railways, and statements made by railroad officers attributing increases in operating expenses in 1920 to the results of the practices or policies of the Railroad Administration during 1919 or 1918. He was to be followed by W. G. McAdoo, who was director general in 1918.

Mr. Hines said he felt great pride in what was accomplished, particularly in view of the exceptional difficulties after the armistice, such as the diminution in morale; the loss of many of the most experienced railroad men in the Railroad Administration, such as Carl Gray, R. S. Lovett, A. H. Smith and C. H. Markham, and the impossibility at that late date to obtain other men of equal experience; the violent fluctuations in business on account of the slump in the first six months of 1919 and the nation-wide coal strike in the last two months, and the tendency to let down in morale as the change of control approached.

Operating Statistics Compared With 1920

He showed that compared with 1916 and 1917 the year 1919 made a far more favorable showing as to car shortages, notwithstanding that in September and October, 1919, the business had been exceedingly heavy, and was also more favorable as to the number of passenger train car miles and freight train car miles per locomotive mile, also as to passenger miles per passenger train mile, and also as to revenue ton miles per locomotive mile or per freight train mile. He said 1919 was also more favorable than 1920 in all these respects except revenue ton miles per freight train mile, and that in this respect also 1919 was more favorable than 1920 in what he termed the only two fairly comparable months—September and October.

Mr. Hines also asserted that, contrary to many representations, the car miles per day in 1919 had made an exceedingly favorable showing for the only months where comparison was fair, and that for practically all the months of 1919 the showing was better than in 1921.

He said that the year 1919 made a better showing than any of the preceding three years in the consumption of fuel, and also compared most favorably with 1920.

He called attention to the fact that in 1920 the transportation results obtained had been greatly applauded and also mentioned that they had not been exclusively through the action of the railroad companies but that the railroad executives had had to appeal to the Interstate Commerce Commission for its aid through unifying anew certain phases of transportation.

Mr. Hines claimed that the quotations he made from the reports of the regional directors for 1918 and 1919 show a vigilant and efficient performance of the public service and a satisfactory handling of the business under peculiarly difficult conditions. He mentioned specially the attention to insuring the scheduled performance of passenger trains, the handling of live stock, oil, and packing house products, etc., improvement in the freight claim situation, in fuel economies and in the methods of the stores' departments in handling

materials and supplies. These reports, he said, suggested the exceptional degree of initiative and energy displayed by the able railroad men who were charged with seeing to the adequate performance of the public service. He emphasized that such evidence had the advantage of viewing the whole situation and that no adequate idea could be obtained of the results by paying attention simply to extreme cases which could not reflect the general average of results achieved.

He stated that the federal managers were expected to operate according to established practices subject to the direction of regional directors, and subject to the policies of the central administration. He pointed out that these federal managers were absolutely free to select and change their subordinate officers just as under private control.

Mr. Hines then took up the question of efficiency of railroad labor. He said the true basis of comparison was the number of man hours paid for, since the change to the eight-hour day made comparison of the number of employees misleading and that the traffic units of service per man hour had increased from 82 in 1915 to 96 in 1917 and 1918 and to 100 in 1919, thus showing more traffic units per man hour than ever before. He stated that "with this start" the result had been even better in 1920 when 101 traffic units were realized for each man hour paid for. He suggested that 1921 ought to show even better results, especially since increased efficiency was to be expected as unemployment increased.

Maintenance

The allegations that the railroads were turned back in an under-maintained and broken-down condition were next discussed. Mr. Hines said this was a "fiction representing extraordinary distortion of the facts" and that if such conditions had existed, the regional directors would have been the first to know it and to comment upon it. He said their reports could be searched in vain for anything indicating a broken-down condition of the properties, but on the contrary, they showed the properties had been substantially maintained, except for some shortage of rails, ties and ballast upon some of the railroads. He elaborated upon this by quoting from reports of the various regional directors.

The critics of the Railroad Administration's maintenance policy, Mr. Hines said, seem to take the remarkable position that the Railroad Administration ought not to place any limitations upon the amount of maintenance, although every railroad company makes it the policy to limit its officers strictly in the amount of maintenance. Mr. Hines said it was indispensable to have a limitation to protect the government and that the Railroad Administration had adopted the perfectly proper limitation that the amount of maintenance should correspond reasonably with the government's contract obligations, except in circumstances where still more maintenance was necessary for safety, or in order to do the business satisfactorily.

Taking up equipment specifically, Mr. Hines said that the railroad executives seemed to take as a starting point the idea that their equipment was in an ideal condition at the beginning of federal control, but that this was wholly wrong. He quoted from testimony of President Rea of the Pennsylvania Railroad Company before the Interstate Commerce Commission in the Rate Advance Case in 1917, in which Mr. Rea said that it had been impossible to maintain passenger car equipment, that freight cars had been in service so continu-

ously that comparatively little general repair work had been done and a great many cars were in need of general repairs but had been kept in service by patching and that on account of insufficient and inefficient labor the locomotives were improperly prepared for road service and would break down en route, and that the Pennsylvania Railroad System, like the Eastern carriers as a whole, was in a situation where it had had to curtail maintenance expenses.

Mr. Hines also stated that Carl R. Gray, now president of the Union Pacific, transmitted with his report for 1918 as director of the Division of Operation in the Railroad Administration, a report from his mechanical department, which stated that one of the prime reasons why the government had to take possession of the railroads was the generally bad condition of locomotives and cars.

Because of the bad condition of equipment at the beginning of federal control and of the heavy use to which it had to be subjected during the war the shops had been worked from 60 to 70 hours per week until after the armistice, but were then reduced to eight hours per day. In the spring of 1919 the federal managers on account of the slump in business had reduced the shop hours and forces to some extent and the number of bad order cars considerably increased.

On this account in June instructions were issued to all the regional directors to restore all car repair forces to eight hours, in August instructions were issued to increase the car repair forces to nine hours, and in September these instructions were reiterated together with the direction that even if car repairs were low on a particular road it should work on repairs to cars from other railroads when feasible.

Mr. Hines explained that although it was believed that in view of the bad condition of equipment at the beginning of federal control and the heavy expenditures upon it, the government had substantially over-maintained the equipment, yet in order to handle the business an extensive maintenance program was carried on; but that naturally under such circumstances the government wished the maintenance put on equipment which it could use, and hence various instructions were issued to give the preference to repairs which could be made promptly so that the equipment could be speedily put in service in order to meet the heavy business that developed in midsummer and the fall.

Mr. Hines contradicted a statement by Daniel Willard to the effect that the Railroad Administration had ordered a change in the standard of what made a bad order car. Mr. Hines said that, on the contrary, the tests of inspection were probably more strict during federal control than prior thereto, and in substantiation of this position he quoted from a memorandum prepared in November, 1919, by J. J. Tatum of the Baltimore & Ohio, who during the war was in the mechanical department of the Railroad Administration, to the effect that standards of inspection were higher during federal control than prior thereto. Mr. Hines also said that in the rate investigation before the Interstate Commerce Commission in 1917 Mr. Willard had shown that under private management the railroad companies were giving preference to repairs which could speedily be made, in order to get cars quickly back into service, rather than to make heavy repairs, and said this was precisely what Mr. Willard was attempting to condemn the Railroad Administration for doing.

The effect of his advice at the end of federal control, Mr. Hines said, was that at that time locomotives were in distinctly better condition than at the beginning and that the condition of freight cars would compare favorably with the condition at the beginning. He emphasized that it must be remembered that both locomotives and freight cars were, generally speaking, in an exceedingly poor condition at the beginning of federal control and in a poorer condition in fact than was indicated by statistics, since the congestion and exceedingly abnormal conditions kept both locomotives and

cars from being classed as needing repairs when they really ought to have been so classed.

As to maintenance of way and structures, Mr. Hines explained that careful studies were made so as to enable the government to control the maintenance according to its contract obligation. He pointed out that the complaints offered to the limitations placed on maintenance rested necessarily on the untenable position that the government should have left the maintenance at the unlimited discretion of the regional directors and federal managers. He showed that aside from a temporary limitation for the month of June, which was "designed to get control of the situation," the limitation was simply to conform to the contract obligation. He maintained, however, that in doubtful cases it was better to fall somewhat short of the contract obligation rather than to exceed it, because the contract expressly gave the corporation a claim for the shortage and did not expressly give the government a correspondingly clear claim for the excess.

Labor Policies of the Railroad Administration

Turning to the labor policies of the Railroad Administration Mr. Hines said critics of these policies necessarily imply that they should have been left as they were before the war, but this was impossible because wages were known to be low and relations between managements and employees were decidedly strained and getting more so. The Railroad Administration was called upon to assume responsibility and to unify control and it had to adopt a policy. The critics offered no policy except the impossible one of leaving things as they were.

Mr. Hines characterized as extraordinary the apparent position of various critics that the railroad managers should have continued to have the final say as to all questions of discipline. He said the government could not tell the employees they must not strike because conditions had changed and they were working for the government and at the same time leave them subject to the same railroad managers without any supervision whatever by the government.

The necessity for government supervision was so obvious, Mr. Hines said, that the practical railroad men in the Railroad Administration promptly sanctioned the creation of the boards of adjustment and these were created by agreements between the regional directors and the representatives of organized labor. Mr. Hines said he understood all these agreements had the approval of Mr. Gray, director of the Division of Operation, and now president of the Union Pacific.

He had never heard any suggestion that any better method could have been selected for the discharge by the government of its responsibility in this matter than the method provided by these agreements entered into by the regional directors. He also said he believed these agreements constituted an important and beneficial precedent in dealing with the railroad labor problems of the country and that this was true whether such boards of adjustment in the future were local or national.

There had been much criticism of the excessive general level of railroad wages and of the excessive number of railroad employees, but after the return to private control, the Labor Board had shown that the general level of wages during federal control was not excessive by approving a further increase of over \$600,000,000 per year and the railroad executives had shown that the number of employees was not due to political considerations, because in 1920 they increased the number of employees by 118,000, and it then came to be more clearly realized that the director general was right in explaining that the increase in the number of employees was due to the eight-hour day and did not mean that the railroads had to pay for an increased number of hours.

Mr. Hines said that numerous comments had been made upon specific instances of excessive pay and no doubt among

nearly two million employees there would be a considerable number of cases of this sort, but that these cases were not typical, and it was precisely their extreme character which had caused them to be so widely discussed.

National Agreements

Taking up the national agreement with the shopcrafts, which was signed September 20, 1919, and made effective October 20, Mr. Hines said there were numerous important misconceptions tending to confuse the committee, particularly the notion that this national agreement accounted for a very large part of the heavy increase of \$345,000,000 in the cost of maintenance of equipment in 1920 as compared with 1919. He said that, contrary to the implications on the part of many of the critics of this agreement, the rules involving possibility of relatively great increases in cost had not been put into effect by the agreement but had been in effect throughout the year 1919. He pointed out that the recognition of the shopcrafts organizations and the handling of grievances by Board of Adjustment No. 2 were already in effect in 1918.

The points most discussed by critics before the committee and in the press, Mr. Hines said, were the standardization of pay and classification of work, resulting in making rates of pay uniform throughout the country and defining work so that it might be necessary for employees of several classes to work on the same job though a small one. He said these provisions of the national agreement were almost identical in language with the general order issued July 25, 1918, and hence they were in effect throughout 1919 and could not account for the increased expense in 1920, and the same was true as to time and a half for overtime over eight hours and for all time on Sundays and holidays. He said that there had also been much comment on the elimination of piecework but that this did not originate with the national agreement but resulted from instructions in December, 1918.

He also pointed out that numerous railroad companies had agreements similar to the national agreement prior to federal control, this being particularly true of the railroads in the Southwest, including Atlantic Coast Line, Norfolk & Western and Southern Railway and numerous others, and that agreements containing numerous similar provisions were in effect on many Southwestern and Northwestern railroads, and also that rules on many other railroads established many of the principles contained in the national agreement.

In order to show the bearing of this national agreement upon the increase of costs in 1920 over 1919, Mr. Hines said, it would have been necessary to eliminate the questions of standardization, classification, time and a half and piecework on all railroads and also to eliminate operations on a great many railroads to the extent that they had similar provisions before federal control, and that the result would have been so to narrow the effect of the national agreement as to force the railroad executives to omit the national agreement as a leading explanation for the increase of 1920 over 1919.

Mr. Hines claimed that, as a matter of principle, it was right and proper to establish by agreement a code of rules to protect the employees; that the railroad companies themselves had done this long before as to train and engine men and many of them had done so as to the shopcrafts. He explained that as to procedure the provisions of great relative importance, from a pecuniary standpoint, were already in effect and that all the provisions were considered and heartily recommended by W. T. Tyler, director of the Division of Operation, who had supervision of the negotiation and was in daily contact with it and who had the benefit of the advice of both the management and labor members of the Railroad Administration's Board of Wages. Mr. Hines claimed that these facts substantially contradicted the misleading statements by representatives of the organization of railway executives to the effect that he had signed an agreement gotten up solely by representatives of organized labor.

Why Rates Were Not Advanced in 1919

It seemed desirable, Mr. Hines said, to state the facts bearing upon the question of making an increase in rates in 1919, since most of the comment on that subject appeared to be made without knowledge of the facts. He explained that the entire deficit of Class I railroads in federal control up to October 1, 1919, was \$480,000,000 and would have been eliminated if the rate increases which took effect in June, 1918, could have taken effect January 1, 1918. This constituted a striking parallel to the condition in 1920, when practically the entire deficit for the 12 months could have been avoided if the rate increase had taken effect at the beginning of the year, instead of in September. But the necessary delay in the effective date of the increase in 1920 was not regarded as a reason for an additional increase. Another striking parallel existed between the first six months of 1919 and the twelve months of 1921, he said, in that in both these periods the failure to pay in full the contract rental or the statutory return was largely due to a slump in business, but no one claimed that there should be a further increase in rates on account of the slump in business.

By reason of these conditions, so similar to subsequent happenings, and because of the impracticability of an accurate estimate of operating cost on the basis of normal traffic, there was no plausible basis for an additional rate increase in the early part of 1919, Mr. Hines contended. Congress certainly manifested entire lack of sympathy with a further rate increase because it repealed the director general's right to put rates into effect without suspension by the Interstate Commerce Commission, removed any presumption of reasonableness attached to rate increases made by him, and also prohibited any increase in intrastate rates without consent of state commissions. While this bill was vetoed by the President on the ground that it subjected the federal power to the power of the states, it was clearly understood that the other features of the legislation would be adopted if rate increases were attempted.

As a result any rate increase in 1919 would have consumed several months because the commission naturally would not have assumed the greater responsibility which the proposed legislation would have imposed upon it except after thorough investigation.

When suggestions for a rate increase became insistent in the summer of 1919, it was evident they could not be made effective much, if any, before the return of the railroads to private control, which the President had announced would be on December 31.

The director general was unwilling in such conditions to attempt to make a rate increase which would be practically entirely for the benefit of private management, especially since the statutory power to make an increase seemed to contemplate that it would be for the purpose of paying operating costs and rental during the period of operation by the government as a unified system. In any event, such an increase would not have met conditions after the return to private control because the return contemplated by the statute was \$200,000,000 more than the rental payable by the government. In addition the increase in traffic made such a favorable showing in July, August and September, 1919, that only five per cent, or at most ten per cent, increase in freight rates appeared necessary to meet all conditions other than those of further wage increases and yet after the return to private control the railroads estimated they needed about \$900,000,000 increase, aside from wage increases. Hence in any event a second increase would be necessary after the return to private control, Mr. Hines said, and it was clear that two different increases would be so disturbing as to be seriously contrary to the public interest. Indeed, if a rate increase had been made effective, say in December, 1919, it is probable that public antagonism would have been so aroused as to make

the further increase necessary on the return to private control impracticable.

Mr. Hines said that he was thoroughly convinced that a rate increase under such conditions would be contrary to the public interest, would be detrimental rather than helpful to the railroad companies themselves and instead of promoting railroad credit would have been injurious to it.

In discussing the general financial results of federal control, Mr. Hines said two separate purposes must be clearly distinguished. One purpose was to ascertain the total appropriations which Congress had made and would have to make and that this purpose called for consideration of every character of expense connected with federal control. But, he said, the purpose primarily related to the Senate inquiry was entirely distinct, and was the purpose of comparing the federal operation of the Class I railroads with the private operation of those same railroads. For this purpose there were numerous expenses incurred by the government which had no bearing whatever and only those expenses should be considered which were embraced in the operating costs as defined by the commission's accounting rules. He pointed out that operating statistics of Class I railroads under private operation were not charged with differences between quantities of materials on the first and last of the year, not for loss on additions and betterments made for special purposes or for other items outside of regular operating costs.

None of these matters, Mr. Hines said, had any proper relation to a comparison of operating results of Class I railroads under private control and federal control. For the purpose of a fair comparison the entire deficit for the 26 months of federal control for the Class I railroads was the excess of the rental over the net railway operating income, or about \$714,000,000 for the 26 months, as compared with about one million dollars on the same basis for the first 12 months of private operation. But he said that was not a satisfactory basis for comparison because it depended so largely upon the level of rates and the dates when rate increases became effective. The true basis of comparison should be the total cost, which consists of total operating expenses, tax accruals, etc. On this basis the total cost of operating Class I railroads was:

| | |
|---------------|-----------------|
| In 1917 | \$3,080,000,000 |
| In 1918 | 4,240,000,000 |
| In 1919 | 4,690,000,000 |
| In 1920 | 6,109,000,000 |

Testimony of Labor Representatives

Mr. Hines was followed by J. F. Anderson, vice-president of the International Association of Machinists, representing the Railway Employees' Department of the American Federation of Labor, who made a general statement denying that the national agreements had caused unnecessary expense or had hampered the operations of the railways, saying that the cases cited by railroad officers to discredit the national agreements were extreme cases. Some of the cases, he said, did occur and some were only partly true, while others were wholly fictitious and in some cases the effects cited were due to the inefficiency of the management in administering the rules. He asserted that many of the rules had been in effect on hundreds of railroads before the national agreements, and he filed with the committee a statement which he said contained detailed answers to every example of the effect of the national agreements which had been cited by representatives of the railroads. He said there had never been an opportunity to present these in full either to the committee or to the Railroad Labor Board and that the labor board had recently issued a decision as to the rules which he considered most unjust and to his mind indicated that the board had been influenced by the railroad propaganda. In reply to a question by Senator Cummins, Mr. Anderson said that there

is no authority, that can figure out the exact cost of the national agreements as they have been applied under abnormal conditions.

J. J. Dermody, vice-president of the Order of Railroad Telegraphers, presented a statement prepared by E. J. Manion, president of that organization. Mr. Manion said that the railroads in their testimony had apparently desired to leave the impression that if they had not been taken over by the government wages would not have been substantially increased and that the increases made were excessive and left as a heritage to the private managements on the return of the railroads. He said that when the government took over the railroads there were pending demands for wage increases from practically all classes of employees and that the first increases made during federal control in 1918 were, therefore, in the nature of a heritage from private control. He declared that railroad employees had been so underpaid before that time that the percentages of increase seemed high. He went into detailed analysis of the wage schedules from the standpoint of the telegraphers.

H. T. Hunt Testifies

Henry T. Hunt, formerly a member of the labor board, gave a general discussion of the railroad situation, taking as a text a statement made in testimony by A. H. Smith, president of the New York Central, that "95 per cent of this railroading is human." Mr. Hunt took the position that the railroad problem is rather of men than money and that one of the most important essentials to an improvement of the railroad situation is a greater degree of co-operation between the managements and the employees. He said two things are necessary, a better morale among the personnel of the railroads and better credit for the railroads. He declared that railroad employees never have been and are not overpaid, but that the difficulties of the railroads do not arise so much from their wage costs as from the methods of the railroad managements in handling their labor and capital. He recognized that many economies in railroad operation could be brought about by greater capital expenditures but he said the railroads are not now using the money that is available in the ways that will tend toward the greatest of economies. The railroad executives say that they are doing all they can do to bring about greater co-operation with their employees, but they are not acting in such a way as to convince the employees of their sincerity and the employees do not think the managements have done all they can to bring about good will.

For example, he said, frequently thousands of railroad employees are laid off without warning because all the available income is required to meet interest payments, yet at the same time the employees see the railroads spending money for competitive purchases, such as the proposed purchase of the Chicago Junction by the New York Central. In other words, he said, the managements do not give labor sufficient consideration in planning their outlays. If certain capital expenditures resulted in labor saving to such an extent as to require less men, the men could adjust themselves to that condition, but the ways in which the railroads now economize frequently result in large lay-offs without warning.

Good management, he said, could stabilize the number of employees and thus improve the quality of labor. He also pointed out that the fixing of just and reasonable wage rates by some authority does not insure an adequate compensation to the men, because the board in fixing the wage rates assumes continuous employment and when the men are laid off the effect is destroyed. As one remedy he suggested that the employees ought to have a greater degree of participation in the management, including representation on the boards of directors, and he suggested that banking interests should nominate representatives of labor for membership on the boards.

General News Department

The Interstate Commerce Commission has issued orders authorizing common directors among the companies comprising the systems of the Philadelphia & Reading and the Boston & Maine.

The Nashville, Chattanooga & St. Louis, on January 9, changed its engine terminals from Lexington, Tenn., to Hollow Rock Junction where new repair shops and other buildings will be provided.

Senator La Follette has published in the Congressional Record of January 23 a memorandum report of the alleged "secret" conference held at Washington on December 9, attended by representatives of the railroads and shippers, including several farm organizations.

The Youngstown Equipment Company has taken a contract to operate the Kent (Ohio), shops of the Erie Railroad. Webster W. Warner, superintendent of shops has resigned his position with the railroad to become manager for the equipment company.

The United States Supreme Court on January 23 denied the petition of the state of North Dakota for permission to file an original bill against the order of the Interstate Commerce Commission increasing intrastate rates in North Dakota. The court held that the case must be first taken up in the district court.

The engineman and fireman of the Southern Pacific operating their locomotives with the greatest efficiency in the use of fuel oil, are to be awarded gold badges. The name of the winner with the date of the award is to be inscribed on the back of the medal. If a man wins an award a second time, a red enameled star will be inserted in the badge. The award is to be made on a three months' performance basis.

Passenger train punctuality on the Pennsylvania railroad during the year recently ended is reported as 11 per cent better than the previous year. For the period from March to December, inclusive, for the two years, 93.9 per cent of the passenger trains operated were on time in 1921, as against 82.5 per cent on time during the same period in 1920. In 1921 the percentage of trains making schedule time was 96.8, an improvement over 1920 of 4.8 per cent.

Theft of a locomotive and a carload of cheese from the Chicago & North Western yards in Milwaukee, Wis., is the charge against two men now under arrest in that city. The men obtained the locomotive by posing as railroad employees. They ran engine and car 18 miles, but were halted at a crossing by another train and were forced to make a get-away. It was the plan of the thieves to unload the cheese into a truck and then dispose of the loot through the establishment of one of the men, who had a commission business.

Meals at a fixed sum of one dollar are now furnished at mid-day and evening on the dining cars of the Sunset Limited express trains of the Southern Pacific, the diner having a choice of meat or fish, two vegetables, bread and butter and coffee, tea or milk. The commissary department of the Southern Pacific now furnishes from its headquarters at West Oakland, Cal., the material for 250,000 meals monthly. The West Oakland plant is now being enlarged and will soon be the largest and most complete establishment of its kind in the world, so far as is known.

The New York Farm Bureau Federation announces that efforts are to be made at once to secure the repeal of the New York State full-crew law. S. L. Strivings, president of the Federation, in a statement issued at Syracuse, says

that advices received from the railroads show that the unnecessary expenses incident to this law in New York State amount to \$2,000,000 yearly—or to \$3,000,000 when freight traffic is heavy. During the seven years and five months that this law has been in effect, the railroads have been put by it to an unnecessary expense of about \$16,000,000.

Engineers of seven different classes are now wanted by the Interstate Commerce Commission, for duty in connection with the valuation of railroads and telegraph lines; and the Civil Service Commission, Washington, announces that applications will be received until further notice. Salaries range from \$1,320 for junior engineers to \$2,700 for senior engineers, grade 2. Appointees whose salary is \$2,500, or less, and whose services are satisfactory, may be allowed the regular bonus of \$20 a month. Engineers of the several grades are wanted in the fields of civil, electrical, mechanical, signaling, architectural and telegraph engineering.

Edward H. Shaughnessy, second assistant postmaster general, speaking at a hearing before the post office committee of the House at Washington has set forth the reasons which make desirable a general and extensive enlargement of the air mail service. He says that business interests, particularly bankers, are calling for additional air mail service, especially night flying, by which they would save large sums of interest by exchanging their clearings from city to city in less time. Representative Steenerson, chairman of the committee, has prepared a bill under which the postmaster general would contract for the establishment of routes and would prescribe, for transportation of first class mail by airplane, rates three times the regular postage rates.

Tentative Valuations

The Interstate Commerce Commission has issued tentative valuations in which it finds the final value of the property of the Durham & South Carolina as of June 30, 1917, to be \$460,796 and of the Ulster & Delaware for 1916 to be \$6,472,889 for the property used and \$6,468,019 for the property owned.

Sleeping Cars for the Canadian Pacific

In the description of the new sleeping cars for the Canadian Pacific published on page 1301 in the issue of December 31, 1921, it was stated that the frames and trucks were built by the Canadian Car & Foundry Company. We are now informed that the frames and trucks of 18 of the 12-section sleeping cars were built by the National Steel Car Corporation, Ltd., Hamilton, Ont.

I. C. C. Appropriation

The independent offices appropriation bill reported by the House appropriation's committee on January 18 provides for an appropriation of \$4,859,500 for the Interstate Commerce Commission for the fiscal year 1923, of which \$1,300,000 is for the valuation work. The valuation appropriation is \$450,000 less than the appropriation for 1922 and \$200,000 less than was recommended by the Budget Bureau.

Examination for Locomotive Inspectors

The United States Civil Service Commission announces an open competitive examination for inspectors of locomotives on March 8 and 9, 1922. Vacancies in the Bureau of Locomotive Inspection of the Interstate Commerce Commission at salaries of \$3,000 a year and in positions requiring similar qualifications will be filled from this examination. Applica-

tions for the examination should be made on Form 1892 which can be obtained from the Civil Service Commission, Washington, D. C.

The June Conventions

In the *Railway Age* of January 21, in a news item announcing the arrangements of the Railway Supply Manufacturers' Association for exhibits at the annual convention of the American Railway Association, Division V, appeared a statement to the effect that, although it was considered advisable to cancel the convention in 1922, manufacturers were showing great interest in the plans for this year's convention. This statement is plainly a typographical error. The sentence referred to the convention which was cancelled in 1921 and not to this year's convention. Otherwise the item is correct. Plans are being made to hold the convention this year with exhibits, on June 14-21, at Atlantic City.

Feiker to Continue With Department of Commerce in Advisory Capacity

F. M. Feiker, vice-president of the McGraw-Hill Publishing Company, who for the past eight months has been assisting Secretary of Commerce Herbert Hoover in the reorganization of the department has resigned. Mr. Feiker has not, however, completely severed his relations with the department. He has been appointed a special agent of the Bureau of Foreign and Domestic Commerce, to continue in a consulting capacity the work he has begun. Under the direction of Mr. Feiker and Dr. Julius Klein, director of the Bureau of Foreign and Domestic Commerce, the industrial and business contacts of that Bureau have been enlarged, business relations with trade association committees have been established and the so-called commodity division of the Bureau created.

Union Leaders Dissatisfied With Labor Board Decisions

E. H. Fitzgerald, president of the Clerks Organization, in commenting on the new rules (see page 277 of this issue) declared that the recent action of the Labor Board in abolishing time and one-half for the ninth hour "virtually had created a nine-hour day contrary to the intent of the Transportation Act and to common practice in all industries." Mr. Fitzgerald said he and the members of his organization were

greatly disappointed over the decision, terming it "a hard blow, especially in view of the proposed further wage reduction to be sought."

"We are also opposed to that part of the decision covering intermittent service because it provides split tricks, whereby employees are required to be available for duty 12 hours in order to gain pay for eight," he added.

Following conferences at Chicago extending for over two weeks, a committee of 100, representing the six federated shop crafts, decided on January 24, to open a fight on the overtime provisions of the new shop crafts working rules announced by the Labor Board recently. A circular will be issued ordering the system federations on the individual carriers to institute new disputes with the railway managements. If no agreement is reached the issue will be brought before the Labor Board again.

Resumption of Service on the

Southern Pacific of Mexico

Service will be restored over the rehabilitated lines of the Southern Pacific of Mexico into Tepic and Nayarit, on February 2. Trains will be run from Nogales, twice weekly, on Thursdays and Sundays. In announcing this service, H. B. Titcomb, president of the Southern Pacific of Mexico, states that it is difficult to forecast the time when the complete reconstruction of the properties will be made, and also the time when reconstruction will be undertaken on the Tonichi and the Alamos branches. Mr. Titcomb said that the Mexican officials were in full accord with the reconstruction program and that they are now considering seriously the question of financing the amounts due to the Southern Pacific of Mexico.

Pressed Steel Mfg. Co. Wins

Patent Suit in District Court

In the suit of the Pressed Steel Manufacturing Company, Chicago, and W. P. Murphy, against the Mt. Vernon Car Manufacturing Company, Mt. Vernon, Ill., for patent infringement, a decision has been handed down by the United States judge for the Eastern District of Illinois, sustaining the validity of all of the claims of the plaintiff's patents at issue. The patents involved are known as the Murphy-Sisson patent No. 1,031,571, Sisson re-issued patent No. 14,434, Murphy patent No. 1,058,889, Sisson patent No. 1,271,234 and Sisson patent No. 1,254,860, and contain a large number of claims, only 13 of which are at issue. The claims

I. C. C. SUMMARY OF RAILWAY REVENUES AND EXPENSES FOR NOVEMBER (201 ROADS)

| | November | | Eleven months | |
|--|---------------|---------------|-----------------|-----------------|
| | 1921 | 1920 | 1921 | 1920 |
| 1 Average number of miles operated..... | 235,583.62 | 235,086.98 | 235,295.82 | 234,754.11 |
| Revenues: | | | | |
| 2 Freight | \$342,024,698 | \$436,891,209 | \$3,635,562,465 | \$3,940,911,142 |
| 3 Passenger | 182,655,520 | 210,652,325 | 1,065,231,278 | 1,172,620,556 |
| 4 Mail | 7,241,535 | 8,341,313 | 85,826,900 | 142,176,199 |
| 5 Express | 9,783,342 | 10,889,577 | 92,483,655 | 134,369,434 |
| 6 All other transportation..... | 13,803,710 | 15,868,062 | 150,518,393 | 145,287,437 |
| 7 Incidental | 9,541,727 | 12,893,871 | 109,135,169 | 138,779,628 |
| 8 Joint facility—Cr..... | 590,884 | 724,915 | 6,942,344 | 7,144,769 |
| 9 Joint facility—Dr..... | 143,984 | 207,080 | 1,597,795 | 2,184,379 |
| 10 Railway operating revenues..... | 465,497,432 | 592,054,192 | 5,144,102,409 | 5,679,104,786 |
| Expenses: | | | | |
| 11 Maintenance of way and structures..... | 62,362,149 | 81,336,656 | 715,059,775 | 960,905,750 |
| 12 Maintenance of equipment..... | 103,993,189 | 140,797,411 | 1,162,290,632 | 1,445,943,812 |
| 13 Traffic | 6,666,903 | 6,785,291 | 77,152,014 | 66,295,537 |
| 14 Transportation | 178,725,333 | 264,583,290 | 2,104,572,731 | 2,638,297,084 |
| 15 Miscellaneous operations..... | 3,714,023 | 5,056,908 | 45,251,405 | 56,838,052 |
| 16 General | 13,098,228 | 15,606,378 | 153,800,587 | 158,347,561 |
| 17 Transportation for investment—Cr..... | 546,975 | 551,626 | 5,462,401 | 4,594,141 |
| 18 Railway operating expenses..... | 368,012,850 | 513,614,308 | 4,252,664,743 | 5,322,033,655 |
| 19 Net revenue from railway operations..... | 97,484,582 | 78,439,884 | 891,437,666 | 357,071,131 |
| 20 Railway tax accruals..... | 25,363,937 | 22,342,736 | 260,843,088 | 252,073,640 |
| 21 Uncollectible railway revenues..... | 152,842 | 78,469 | 1,242,202 | 971,063 |
| 22 Railway operating income..... | 71,967,803 | 56,018,679 | 629,352,376 | 104,026,428 |
| 23 Equipment rents—Dr. balance..... | 4,362,083 | 3,180,178 | 49,974,365 | 30,588,856 |
| 24 Joint facility rent—Dr. balance..... | 1,407,427 | 1,873,596 | 15,484,229 | 17,557,535 |
| 25 Net railway operating income..... | 66,198,293 | 50,964,905 | 563,893,782 | 55,880,037 |
| 26 Ratio of expenses to revenues (per cent)..... | 79.06 | 86.75 | 82.67 | 93.71 |

- * Includes \$2,666,566, sleeping and parlor car surcharge.
- * Includes \$3,016,571, sleeping and parlor car surcharge.
- * Includes \$30,023,703, sleeping and parlor car surcharge.
- * Includes \$8,755,462, sleeping and parlor car surcharge.

involved are all basic, covering the corrugated steel plate end for freight cars; and the court has decided that they are valid and have been infringed by the defendant, the Mt. Vernon Car Manufacturing Company, in building 1,000 box cars for the Baltimore & Ohio, which were equipped with corrugated steel plate ends furnished by the Chicago-Cleveland Car Roofing Company. An injunction and order for accounting has been granted by the court.

Notice of appeal has been filed by the defendant.

University of Illinois—

Research Graduate Assistantships

The University of Illinois announces that there are ten vacancies for the position of Research Graduate Assistant in the Engineering Experimental Station and also one position for a man who wishes to specialize in gas engineering. These positions are open to graduates of approved American and foreign universities and technical schools who are prepared to undertake graduate study in engineering, physics and applied chemistry. Appointments are made for two consecutive years, at the expiration of which period, if requirements have been met, the degree of Master of Science will be conferred. Not more than half of the time of the assistant is required in connection with the work of the department, the remainder being available for graduate study. Research work and study may be undertaken in railway, mechanical, electrical or civil engineering and also in other branches.

Attached to the position is an annual stipend of \$600 and freedom from fees except these in connection with matriculation. Additional information and application blanks can be obtained from the Director, Engineering Experimental Station, Urbana, Illinois.

"Conditions Affecting the Head of a Rail"

The discussion of the paper presented by James E. Howard, engineer physicist, Interstate Commerce Commission, before the New York Railroad Club on January 20, while brief, brought out that there was a considerable variance of opinion regarding rail failures from that expressed in the paper. Robert Job, chemist, Montreal, Canada, stated that there were other factors to be considered aside from the question of wheel loads. The condition of the steel was highly important in this connection as, for instance, experience had shown that there was a tremendous decrease in fissures when brittleness was eliminated. He also took exception to the statement regarding impinging pressures since fissures do occur under light pressures. He cited in detail some of the results obtained in Austria where there are light wheel loads and where fissures have occurred in number but only where the steel was unsound.

C. B. Bronson, mechanical engineer, New York Central, stated the roads must secure rail to meet the conditions since they have heavy wheel loads and cannot escape from them. On the New York Central, he said, there had been an enormous increase in traffic during past years, with an increase in wheel loads but on the other hand the number of rail failures had decreased. He cited numerous examples of where heavy wheel loads were common yet the occurrences of fissures was comparatively rare. He said that the roads recognized the responsibility resting upon them in this respect but believed that it was a joint responsibility with the manufacturers. He emphasized this point by citing some stretches of line where fissures had been numerous with one make of rail but when a different make had been substituted, the trouble had stopped and no fissures had been recorded to date. Decreasing rail failures was a problem regarding which both the road and the steel companies must co-operate closely and where that was done, better results would be secured.

National Chamber of Commerce

To Consider Railroad Situation

The railroad situation and what should be done about it will be considered at a meeting of the National Council of the Chamber of Commerce of the United States to be held in Washington on Wednesday and Thursday, February 8 and 9. The council is made up of one representative each

from the 1,400 business organizations within the membership of the chamber.

Some business men see a drift towards government ownership and operation unless the roads can be put on a self-supporting basis. They feel that the transportation act should be given a longer trial and that attempts which are being made in Congress to amend the act, if successful, will precipitate a crisis which may make it impossible for the roads to continue under private management. The chamber's railroad committee is of the opinion that the transportation act can be left untouched and at the same time there can be worked out a constructive plan. It will suggest to the council meeting a program for dealing with the situation. This committee in the past has made suggestions which have been adopted by the chamber's membership and some of the corresponding principles subsequently have appeared in legislation. The transportation act itself contains many features which the committee strongly recommends as a result of the years of study which it has devoted to railroad transportation in the United States.

Negotiations Between Railways

and Train Service Brotherhoods

A meeting of the member roads of the Association of Railway Executives was held in Chicago on January 21 to consider whether negotiations between various groups of the railways and the train service brotherhoods should be reopened in an attempt to arrive at a settlement of existing differences by direct negotiations. The meeting grew out of informal conferences between several railway executives and the heads of the train service brotherhoods which were initiated by Secretary of Commerce Hoover.

Following the meeting in Chicago, Thomas DeWitt Cuyler, chairman of the Association of Railway Executives, authorized the following statement, which shows the decision reached by the railways at their meeting:

"On Monday, January 16, Secretary Hoover issued a statement referring to an informal meeting held in Washington on that date between some of the railway executives and representatives of the train service organizations, and said in part:

"It was decided to submit to the railway companies and to the train and engine service organizations the proposal that the pre-war regional conferences should be convened to consider and endeavor to adjust all questions between the railways and the four brotherhoods."

"At a meeting of the member roads of the Association of Railway Executives, held in the Hotel Blackstone today, this suggestion was submitted, and the following resolution adopted:

"Resolved, That it is the sense of this association, as one of the methods provided by Section 301 of the Transportation Act, that conference committees, representing the railway managements in the Eastern, Southeastern and Western territories of this association, similar in nature to those which in some territories handled negotiations with the four brotherhoods prior to federal control, be constituted and be authorized to meet with the four train and engine service brotherhoods, in a fair effort to compose and adjust all points now at issue, no restrictions to be imposed upon the consideration of any and all questions of wages and rules governing working conditions.

"In default of an understanding mutually agreeable in any territory, recourse to be had to the Labor Board in the regular manner provided by the Transportation Act.

"This resolution shall not be construed so as to prevent separate negotiations in additional territories not mentioned above, if desired by the roads in such territory, nor shall it be construed as preventing railroads individually from excepting themselves from such general negotiations, substituting therefor individual negotiations with their own men."

"The four transportation brotherhoods above referred to are the Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen and Enginemen, Order of Railroad Conductors, and Brotherhood of Railroad Trainmen, and constitute approximately one-quarter of the railway employees of the country.

"This action does not involve an abandonment by the railways of their previously pledged policy to seek a reduction in the labor cost of railway operation, the benefit of which

is to be turned over to the public in reduced rates. It simply represents an attempt, by direct negotiation and discussion with the leaders of these four organizations, to arrive at a fair and amicable settlement of the present questions affecting those employees."

National Railway Appliances Association Exhibitors

The following firms have taken space and are arranging to participate in the exhibit which the National Railway Appliances Association will present in the Coliseum, Chicago, on March 13-16, during the annual convention of the American Railway Engineering Association and the stated meeting of the Railway Signal Association. As noted, this list includes 161 firms which have taken place to date.

Adams & Westlake Company, Chicago.
Adams Motor & Manufacturing Company, Chicago.
Air Reduction Sales Company, New York.
American Abrasive Metals Company, Chicago.
American Car & Foundry Company, Chicago.
American Casting Company, Birmingham, Ala.
American Chain Company, Inc., Bridgeport, Conn.
American Hoist & Derrick Company, St. Paul, Minn.
American Kron Scale Company, New York, N. Y.
American Malleable Castings Association, Cleveland, Ohio.
American Radiator Company, Buffalo, N. Y.
American Steel & Wire Company, Chicago.
American Valve & Meter Company, Cincinnati, Ohio.
American Vulcanized Fibre Company, Pittsburgh, Pa.
Argyle Railway Supply Company, Chicago.
Armco Culvert & Flume Manufacturers' Association, Middletown, Ohio.

R. & L. Baker Company, Cleveland, Ohio.
Balkwill Manganese Crossing Company, Cleveland, Ohio.
Barrett Company, New York.
Barrett-Cravens Company, Chicago.
Bethlehem Steel Company, Bethlehem, Pa.
Boss Nut Company, Chicago.
Blaw-Knox Company, Pittsburgh, Pa.
L. S. Brach Manufacturing Company, Newark, N. J.
Brown Hoisting Machinery Company, Cleveland, Ohio.
Bucyrus Company, South Milwaukee, Wis.
Bryant Zinc Company, Chicago.
Buda Company, Chicago.

Carbic Manufacturing Company, Duluth, Minn.
Carter Bloxomend Flooring Company, Chicago.
Challenge Company, Batavia, Ill.
Chicago Bridge & Iron Works, Chicago.
Chicago Flag & Decorating Company, Chicago.
Chicago Malleable Castings Company, Chicago.
Chicago Pneumatic Tool Company, Chicago.
Chicago Railway Signal & Supply Company, Chicago.
Central Electric Company, Chicago.
Cleveland Railway Supply Company, Cleveland, Ohio.
Cramer, Adams & Company, Chicago.
Chipman Chemical Engineering Company, Inc., New York.
L. & R. Culvert Company, Chicago.

Delco-Light Company, Dayton, Ohio.
Detroit Graphite Company, Chicago.
Detroit Steel Products Company, Detroit, Mich.
Diamond State Fibre Company, Bridgeport, Pa.
Dickinson, Paul, Inc., Chicago.
Dilworth, Porter & Company, Inc., Pittsburgh, Pa.
Direct Sales Company, Chicago.
Doty Business Machines Company, Chicago.
Duff Manufacturing Company, Pittsburgh, Pa.

Edison Storage Battery Company, Orange, N. J.
Edison, Thos. A., Incorporated, Bloomfield, N. J.
Electric Storage Battery Company, Philadelphia, Pa.
Elwell-Parker Electric Company, Chicago.
Engineering & Contracting Publishing Company, Chicago.
Eymon Crossing Company, Marion, Ohio.

Fairbanks, Morse & Co., Chicago.
Fairmount Gas Engine & Railway Motor Car Company, Fairmount, Minn.
Federal Signal Company, Albany, N. Y.
Federal Electric Company, Chicago.

Flannery Bolt Company, Pittsburgh, Pa.
Frog, Switch & Manufacturing Company, Carlisle, Pa.

General Automatic Scale Company, St. Louis, Mo.
General Electric Company, Schenectady, N. Y.
General Railway Signal Company, Rochester, N. Y.
Gosso Company, Chicago.
Graver Corporation, Chicago.
W. & L. E. Gurley, Troy, N. Y.

Hall Switch & Signal Company, Garwood, N. J.
Hatfield Rail Joint Company, Macon, Ga.
Hayes Track Appliance Company, Richmond, Ind.
Hazard Manufacturing Company, Chicago.
Headley Good Roads Company, Philadelphia, Pa.

Howlett Construction Company, Moline, Ill.
Hubbard & Company, Pittsburgh, Pa.
Illinois Steel Company, Chicago.
Ingersoll-Rand Company, New York.

Johns-Manville, Inc., New York.
O. F. Jordan Company, East Chicago, Ind.

Kalamazoo Railway Supply Company, Kalamazoo, Mich.
Kaustine Company, Inc., Buffalo, N. Y.
Kelly-Derby Company, Inc., Chicago.
Kerite Insulated Wire & Cable Co., Inc., Chicago.
Keuffel & Esser Company, New York.
Keystone Tool Grinder & Manufacturing Company, Pittsburgh, Pa.
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio.
Koehring Company, Milwaukee, Wis.

Lehon Company, Chicago.
Lorain Steel Company, Lorain, Ohio.
Lufkin Rule Company, Saginaw, Mich.
Lundie Engineering Corporation, The, New York.

M. W. Supply Company, Philadelphia, Pa.
Mac Rae's Blue Book, Chicago.
Maintenance Equipment Company, Chicago.
Massey Concrete Products Corporation, Chicago.
McGraw-Hill Company, Inc., New York.
Mechanical Manufacturing Company, Chicago.
Midvale Steel & Ordnance Company, Philadelphia, Pa.
Miller Train Control Corporation, Danville, Ill.
Milwaukee Tank Works, Milwaukee, Wis.
Morden Frog & Crossing Works, Chicago.
Mudge & Company, Chicago.

National Boiler Washing Company of Illinois, Chicago.
National Carbon Company, Inc., Cleveland, Ohio.
National Lead Company, New York, N. Y.
National Lock Washer Company, Newark, N. J.
National Malleable Castings Company, Cleveland, Ohio.
Geo. P. Nichols & Bros., Chicago.
Northwestern Motor Company, Eau Claire, Wis.

Ogle Construction Company, Chicago.
Okonite Company, Passaic, N. J.
O'Malley Beare Valve Company, Chicago.
Oxweld Railroad Service Company, Chicago.

P. & M. Company, Chicago.
Page Steel & Wire Company, New York City.
Patterson Company, W. W., Pittsburgh, Pa.
Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa.
Pocket List of Railroad Officials, New York.
Positive Rail Anchor Company, Marion, Ind.
Pyrene Manufacturing Company, Chicago.

Q and C Company, New York.

Rail Joint Company, New York.
Railroad Accessories Corporation, New York.
Railroad Herald, Atlanta, Ga.
Railroad Supply Company, Chicago.
Railway Purchases & Stores, Chicago.
Railway Review, Chicago.
Railway Safety Tie Company, Milwaukee, Wis.
Ramapo Iron Works, Hillburn, N. Y.
Raymond Concrete Pile Company, Kansas City, Mo.
Rawls Machine & Manufacturing Co., Chicago.
Reade Manufacturing Co., Jersey City, N. J.
Reliance Manufacturing Company, Massillon, Ohio.
Richards-Wilcox Manufacturing Company, Aurora, Ill.
Geo. J. Roberts Company, Dayton, Ohio.

Sellers Manufacturing Company, Chicago.
Signal Accessories Corporation, Utica, N. Y.
Sherwin-Williams Company, Cleveland, Ohio.
Simmons-Boardman Publishing Company, New York.
T. W. Snow Construction Company, Chicago.

Templeton, Kenly & Company, Ltd., Chicago.
Toledo Pipe Threading Machine Company, Toledo, Ohio.
Track Specialties Company, New York City.
Train Control Appliance Company, El Paso, Texas.

Union Switch & Signal Company, Swissvale, Pa.
U. S. Wind Engine & Pump Company, Batavia, Ill.

Verona Tool Works, Pittsburgh, Pa.
Volkhardt Company, Inc., Stapleton, S. I., N. Y.

Wailes Dove-Hermiston Corporation, Cleveland, Ohio.
Warren Tool & Forge Company, Warren, Ohio.
Waterbury Battery Company, New York.
Wayne Oil Tank & Pump Company, Fort Wayne, Ind.
Werner Machine Company, West Allis, Wis.
West Disinfecting Company, New York.
Western Electric Company, Inc., New York.
Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.
Wm. Wharton, Jr., & Co., Inc., Easton, Pa.
Wood Shovel & Tool Company, Piqua, Ohio.
Woods Bros. Construction Company, Lincoln, Neb.
Woolery Machine Company, Minneapolis, Minn.
Wyoming Shovel Works, Wyoming, Pa.

Traffic News

F. P. Dougherty has been appointed traffic manager of the Beaver Board Companies, with headquarters at Buffalo, N. Y., succeeding G. E. Griffith, who has resigned.

The Chesapeake & Ohio has reopened its office at Seattle, Wash., and it is in charge of I. W. Dudley, general agent, who was in charge at the time of closing the office when the government took over the railroads.

The Seattle Transportation Club elected the following officers on January 10: President, Alpheus Byers; vice-presidents, I. P. Iversen and W. S. Elliott; secretary-treasurer, R. A. Nichols; directors, W. J. Barr, R. E. Johnston and O. H. Wood.

The Traffic Club of Kalamazoo, Mich., has elected the following officers: President, J. F. Campbell, traffic manager, A. M. Todd Company; vice-president, C. E. Reed, agent, Grand Trunk; secretary, C. H. Winslow, assistant traffic manager, Kalamazoo Chamber of Commerce; treasurer, L. E. Weirs, agent, Chicago, Kalamazoo & Saginaw.

The re-establishment of week-end excursion fares, abolished in 1918, is indicated by an application of the Southern Pacific, approved by the railroad commission of the state of California, on January 13, introducing such fares from Oakland and San Francisco to points in northern California and to towns in Contra Costa county.

Traffic men of Texas will meet at Dallas, on February 8, to confer and decide upon a policy with which to go before an examiner of the Interstate Commerce Commission at St. Louis, Mo., on February 20, at a hearing to consider the establishment of a mileage scale of class rates from Mississippi river crossings to points in Texas.

Senator Trammell of Florida, submitted in the Senate on January 19, a resolution directing the committee on interstate commerce to investigate the present express rates on citrus fruits, vegetables and other perishable farm products with a view to bring about early legislation that will result in a reduction. The resolution was referred to the committee.

The Indianapolis Traffic Club has elected the following officers: president, F. A. Butler, secretary-treasurer, C. B. Cones & Son Manufacturing Company; vice-presidents, W. H. Coltharp, traffic manager, Midwest Engine Company; G. J. Jeffries, general superintendent, Terre Haute, Indianapolis & Eastern Traction Company and Herbert Clark, traffic manager, Ball Brothers, Muncie, Ind.; secretary-treasurer, George N. Baker, freight traffic agent, Monon.

Secretary Hoover, of the Department of Commerce, is warning the public and large consumers of coal that the stage is apparently set for a strike of coal miners on April 1 when the present wage contracts expire and that it would be well for coal consumers to stock up in advance. In this connection he has observed that there has been a general disposition to hold off orders in the hope of a reduction in the freight rates on coal, but has ascertained that there is practically no possibility that any such reduction could be made effective before April 1.

Maine Roads Not Included

in Agricultural Rate Reduction

In the issue of December 31 there was published a statement that the Interstate Commerce Commission on December 22 had granted permission to the New England railroads, at their request, to make the general 10 per cent reduction in rates on agricultural products. We have since been advised that this item was incorrect in giving the impression that all the New England lines were to reduce the rates. The Canadian Pacific lines in Maine, the Bangor & Aroostook, and the Maine Central refused to join in making the reduction. The potato, apple and hay crops were

very large in Maine last year and the three Maine roads felt that they should not be called upon to make the reduction, particularly as at least two of the roads were not in a financial position to reduce their revenues.

Coal Production

During the week ended January 14 bituminous coal production increased to 8,268,000 net tons, according to the weekly report of the Geological Survey. This is a larger production than has been reported since late in November.

Railroads Decline to Reduce Export Coal Rates

R. N. Collyer, on behalf of the tidewater coal carriers, has advised Chairman McChord, of the Interstate Commerce Commission and Secretary Hoover, of the Department of Commerce, that the railroads have given further consideration to the suggested reduction of one dollar a ton in the inland freight rate on coal for export by water and have come to the conclusion that they can find no justification for the reduction. The letter says the present export coal situation appears to be the result of an economic condition caused by unstable foreign credit and exchange, and industrial depression; and also by the comparatively high costs in this country. Also that it is clearly shown that the rate proposed would be ineffective in meeting foreign competition either in the Mediterranean or the West Indies and South America.

Perfect Package Month

The "perfect package campaign," carried out throughout the month of November by the American Railway Express Company and the American Railway Association, resulted in a mass of statistics, made up from data gathered in 1,294 cities, showing that 99.1 per cent of the shipments made during that month at the several express offices and freight stations in those cities were in satisfactory condition. The other nine-tenths of one per cent consisted of shipments in which the carriers made some exception, because of faulty packing, marking or billing. The total number of shipments recorded was 20,239,097, of which a little more than half were by express and a little less than half by freight. The report, issued by Lewis Pilcher, secretary, Chicago, on behalf of the American Railway Association, and by J. H. Butler, New York City, on behalf of the express company, says that some of the local committees which were formed to carry out this campaign, have been continued, for the purpose of providing facilities for the discussion, between shippers and carriers, of problems of mutual interest.

Dinner of Chicago Traffic Club

The fifteenth annual dinner of the Traffic Club of Chicago was held at Hotel La Salle on January 24, with an attendance of about 800 and President R. B. Robertson in the chair. The toastmaster was George A. Blair, general traffic manager of Wilson & Company. Governor Henry J. Allen of Kansas was the first speaker. He said, in part: Labor has killed the goose that laid the industrial egg. More than six million men are now idle because of unstable labor conditions. He dwelt largely upon the success of the Industrial Court of Kansas, where, out of 40 decisions affecting wages and working rules 37 have satisfied both sides. The weakness of the Railroad Labor Board results from the fact that its decisions need not be obeyed.

The next speaker was George M. Barnard, Public Service Commissioner of Indiana. He attacked the apathy of the American people in politics which has allowed our legislation to drift without national aim resulting in Congress being coerced into passing the Adamson Law, on what he called the blackest day in American history; four hundred thousand controlled destiny of over one hundred and ten million. He said that the railroads should be emancipated. The Railroad Labor Board should be abolished or else combined with the Interstate Commerce Commission.

Both speakers were agreed in the opinion that the railroad wage scales should be adjusted so as to permit freight rates to be lowered and thus pave the way for a return of normalcy.

Commission and Court News

Interstate Commerce Commission

The Commission has issued an order authorizing common officers and directors among companies subsidiary to or affiliated with the Chicago & North Western.

The commission has suspended from January 24 until May 24, the operation of certain schedules which provide for the non-application of rates on lumber and other forest products in connection with the Colorado & Southern Ry., when originating in California and Nevada and destined to points in Colorado, leaving combinations applicable.

The commission has suspended from January 26 until May 26, the operation of certain schedules published by the Chicago, Burlington & Quincy which propose the cancellation of transit privileges on grain or seeds at Schuyler, Neb., when originating on the Chicago, Burlington & Quincy in Kansas, Nebraska, Colorado, South Dakota, Montana and Wyoming and destined to Missouri River points, Chicago, St. Paul, Duluth, etc., and points taking same rates, routing via Columbus, Neb., and Union Pacific to Schuyler, Neb., and move out via the Union Pacific, Fremont, Neb., and Chicago, Burlington & Quincy, resulting in the application of combination rates in lieu of the present through rates plus transit charge of $5\frac{1}{2}$ cents per 100 pounds.

State Commissions

The Public Utilities Commission of the state of Michigan, on January 18, opened an inquiry as to whether freight rates on farm products in the state are too high. All Michigan railroads have been ordered to appear on February 15 to show why these rates should not be reduced. The summons states that five different associations of shippers had appeared before the commission and obtained reduction in rates affecting their business but that the farmers, having no organization for gathering the necessary data, had not appeared.

Court News

Gates or Flagman Not Required

The Minnesota Supreme Court holds, in a crossing accident case, that, while the crossing was on a much traveled highway and within the corporate limits of a village, where there were no houses in its immediate vicinity and the view was not obstructed for travelers, and the line was a branch line over which a passenger and freight train passed each way daily, a finding of negligence in failing to maintain gates, a flagman or other warning device, in the absence of a statutory requirement, was not justified.—Hollister v. Hines (Minn.), 184 N. W. 857.

Freight Agent Cannot Agree

to Purchase Damaged Shipment

In an action by a consignee for damages to a shipment of canned tomatoes plaintiff relied upon a statement of the local freight agent as to the damaged cans, that "we will take care of them." The Maine Supreme Judicial Court holds this did not mean that the railroad would take the goods off the plaintiff's hands, but meant no more than that it would dispose of them as it could and account to the plaintiff for the proceeds. Moreover, the power to admit liability for negligence in transportation or to make contracts in whatever amount to purchase at face value damaged goods in the hands of dissatisfied consignee is far outside the scope of the freight agent's employment. The company having disposed of the damaged goods and tendered the proceeds to the plaintiff, verdict for the plaintiff for that amount only was held proper.—A. Gauthier & Son v. Hines (Me.), 115 Atl. 258.

Sunday Held a Holiday Within

48-Hour Limit of Liability

The New York Appellate Division holds that Sunday must be deemed a legal holiday within the provisions of the uniform bill of lading making a carrier liable as a warehouseman only for loss by fire occurring after 48 hours exclusive of legal holidays after notice of arrival. So far as the court found, the only reported decisions construing these provisions on this point are *Hussa Brewing Co. v. C. & N. W.*, 151 Wis. 666, 139 N. W. 415, and *St. Louis B. & M. v. Hicks* (Tex. Civ. App.) 158 S. W. 192, and in both of them it was held that Sunday was excluded.—*Cereal Products Co. v. D. L. & W.*, 190 N. Y. Supp. 698.

Necessity for Structure Along Line a Question

For the Executives, Not for a Jury

The New York Appellate Division holds that the necessity of building fences, water plugs, mail cranes, and other structures along the line of a railroad for the transaction of business, is a question of judgment, depending upon many facts not readily susceptible of proof, and is a question for the executives of the company, not for a jury to decide (*Southern Pacific v. Berkshire*, 254 U. S. 417). When the company has erected its structure, it then may become a question of fact as to whether the location was made and the construction done in a negligent manner.—*Long v. Payne*, 190 N. Y. Supp. 803.

Not Liable for Goods Stolen Before Receipted for

In an action for the value of a bale of cotton, it appeared that the plaintiff had bought the bale from a farmer, who delivered it on the platform and notified the plaintiff, but not the defendant. During the day plaintiff bought 15 other bales, which were similarly placed. At the end of the business day he applied for a bill of lading. The first bale placed on the platform had disappeared and the agent refused to receipt for it. The railroad had posted a notice that it would not be liable for goods left on the platform until issuance of bill of lading. The South Carolina Supreme Court holds the railroad was not liable, notwithstanding the shipper's custom of so leaving bales purchased by him.—*Behrmann v. Atlantic Coast Line* (S. Car.) 109 S. E. 397.

Cold Waiting Room—Damages Must Be Shown

The Mississippi Supreme Court holds that the mere violation of the statute requiring railroads to heat and light their passenger waiting rooms for 30 minutes after the arrival of trains for the use of disembarking passengers does not give a right to recover damages unless it is also shown that the violation resulted in injury to a passenger having the right to use the waiting room. This was regarded by the court as an unusual case, in that the plaintiff, with her husband and two children, was unable to get accommodation for the night at a hotel, and but for the friendly shelter of the waiting room, in which they might have built a fire, they would have had to stay out in the open all night in extremely cold weather.—*Davis v. Day* (Miss.) 89 So. 814.

Railroad Held to Have Acquired Title

by Adverse Possession for 70 Years

In an action in ejectment by the City of New York to recover possession of a strip of land 66 feet in width running from 72d street, New York, to Spuyten Duyvil creek, now used by the New York Central as a part of its system, the New York Appellate Division holds that, the railroad having constructed its tracks on land owned by the city under a claim that its franchise from the state entitled it to do so, and having used the land as a right of way for more than 70 years under this claim, and paid taxes thereon as its property, the railroad had acquired title to the land by adverse possession. Judgment of dismissal was therefore affirmed.—*City of New York v. New York Central*, 190 N. Y. Supp. 777.

Labor Board Decisions

Section Foreman Reinstated

A section foreman on the Central of New Jersey was dismissed on April 2, 1920, as a matter of discipline. The Labor Board decided that the discipline administered was too severe and that he should be reinstated to his former position with seniority rights unimpaired; but not paid for the time lost.—*Decision No. 579.*

Dismissal of Freight Brakeman

for Inefficiency Sustained

A brakeman riding three loaded oil cars that were "kicked" onto a side track failed to stop the cars in time to prevent the loaded cars from striking an empty flat car and breaking it in two. The carrier contended that the accident was the fault of the brakeman for not slackening the speed in time and that his former record was indicative of carelessness and indifference. The Labor Board decided that the claims of the employee for reinstatement could not be sustained.—*Decision No. 527.*

Five-Day Week Not Violation of Rules

On February 9, 1921, the Central of New Jersey found it necessary to make further reductions in expenses and to avoid further decreasing its forces it introduced the five-day week. Maintenance of way employees objected to this measure and quoted Section 1, Article V. of the agreement which reads: "Gangs will not be laid off for short periods when proper reductions of expenses can be accomplished by first laying off the junior men." The Labor Board decided that the railroad did not violate the meaning and intent of the section and that the employees were not entitled to claims for payment for the days lost.—*Decision No. 519.*

Runaround Claims Denied

At Duran, N. M., a terminal on the El Paso & Southwestern where no switch engine is employed, two extras east had been called. While they were coupled onto and making up their trains and drawing time under the schedule, an express train of cantaloupes arrived. Another engine and crew were called and got out ahead of both of the other extras. The carrier contended that the first-in-first-out rule did not apply where engine crews had been called to make up their own trains, which custom had been borne out by past practice. The claims of the enginemen of the first two extras for runaround pay was denied by the Board.—*Decision No. 486.*

Extra Men for Winter Work Not Section Laborers

During the winter of 1920-1921, extra gangs were employed by the Chicago & North Western for removing snow from the right-of-way, the men in some cases working with regular section men. These men were paid straight time for the ninth and tenth hours, but contended that because they were employed with section hands they were entitled to time and one-half after eight hours. The railroad contended that it was within its rights in organizing extra gangs for extra work at any time and the men must be paid in accordance with rules governing the payment of extra gangs. The decision of the Board sustained the contention of the railroad.—*Decision No. 522.*

Full Day for 6½ Hours and Pay for 3 Hours

for Reporting When Not Notified Not to Report

Under Rule 50 of the national agreement, the employees contended that two clerks who had reported for work on the Pere Marquette at their regular starting time, having not been notified, and were then sent home without working,

were entitled to three hours' pay therefor; and that three men, who worked 6½ hours, were entitled to not less than 8 hours' pay. The carrier took the opposite view but the Board held that the men having been regularly employed, were entitled to compensation as contended by their representatives and the position of the employees was sustained.—*Decision No. 566.*

Daily Rated Clerical Employees

Allowed Pay for Armistice Day

The employees at a freight station of the Pere Marquette at Lansing, Mich., with daily rating on the payroll, were notified not to work on Armistice Day, November 11, 1920, this day being declared a legal holiday. The employees claimed one day's pay which had been deducted from their wages on the ground that Rule 66, as it referred to holidays designated in Rule 64, did not cover the case, as the railroad contended. The board upheld the contention of the employees, ruling that since other holidays had not been agreed upon in addition to those in Rule 64 the employees involved were entitled to receive pay for Armistice Day.—*Decision No. 574.*

Right of Clerical Employee to Seniority Right

The position of clerk in the enginehouse of the New York, New Haven & Hartford, at East Providence, R. I., was abolished and the road declined to allow the employee released to exercise his seniority in claiming a position in the enginehouse at Providence, R. I. The employee contended that in the absence of an agreement the seniority districts established by Supplement No. 7, to General Order No. 27, remained in effect, and therefore he had the right to exercise his seniority rights. The board upheld his contention and ruled that he should be permitted to exercise his seniority to any position within the scope of the national agreement and that he should also be reimbursed for the time lost on account of being refused the right to the transfer when his position was abolished.—*Decision No. 578.*

Extra Gang Men Refuse to Work Late

for Straight Time

On July 12, 1921, 23 extra-gang laborers on the Delaware, Lackawanna & Western were engaged in unloading ballast under conditions that made it desirable to have them work overtime, the assistant foreman advising them that they were to be paid straight time for so doing. Previous to this they had been paid time and one-half for overtime, but in accordance with Addendum No. 2, to Decision No. 119, pro rata rates had been established, of which however, the men were not aware. Consequently they refused to work and were dismissed. The Labor Board sustained the action of the carrier but decided that the railroad must not discriminate against these men in case they apply for re-employment.—*Decision No. 588.*

Dismissal of Section Foreman Not Sustained

A section foreman on the San Antonio, Uvalde & Gulf at North Pleasanton, Tex., was dismissed on January 27, 1921, on the ground that he had not been sufficiently attentive in watching his mail box for instructions coming to him by mail or telegraph, as a consequence of which he failed to cover up some oil as instructed in a telegram. The carrier also contended that his failure to follow instructions in this case was a culmination of numerous failures to do so and that he also failed to detect broken angle bars about 2½ months earlier. Inquiry developed that the failure to find the telegram in his mail box was not considered adequate reason for discharging the foreman and that the matter of the angle bars had not been called to his attention at any previous time. The decision of the board was that the management of the railroad was not justified in relieving Mr. Davis and he was restored to his position with seniority rights and paid for time lost.—*Decision No. 552.*

Train Dispatcher Paid for Time Absent on Account of Sickness

In a case between the American Train Dispatchers' Association and the Denver & Rio Grande, it was contended that a dispatcher should be paid for time absent on account of sickness from May 14 to June 20, 1920, inclusive, in accordance with a rule of the road to the effect that dispatchers should be accorded the same treatment as the other division officers for loss of time on account of sickness. The carrier contended that it was not the practice to pay division officers for time lost on account of sickness when necessary to employ some one in their places, and also that the dispatchers are on an eight-day basis while the other division officers are on a monthly basis. The Labor Board sustained the position of the dispatcher.—*Decision No. 564.*

Reduction of Earnings of Clerical Employees to 4½ Days a Week Not Upheld

Five employees in the purchasing department of the Gulf & Ship Island at Gulfport, Miss., were required to work 4½ days a week or 20 days a month, on account of a decrease in business. These employees entered a complaint, contending that the action of the carrier was in conflict with Rule 66, while the carrier contended that the action was taken to avoid reducing the force, that all but one employee expressed willingness on circulation of a petition and that protest was not made until April, 1921, although the change was made in January. The board held that the reduction of the working days of the employees below six days a week was in violation of Rule 66 and that the employees should be compensated for the cut.—*Decision No. 572.*

Section Foremen Not Paid Extra for Work on Holidays

The United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers presented a claim for compensation for section foremen on the Southern Pacific for work performed on holidays. Prior to federal control section foremen were paid by the calendar month for service including Sundays and holidays. The increase under Supplement No. 8 to General Order No. 27 made no change in the number of days constituting a month's work. Under the National Agreement, effective December 16, 1919, the section foremen were placed on a 313-day basis, allowing extra compensation for Sunday work. The carrier continued this plan after March 1, 1920, but the Brotherhood contended for a 306-day basis to allow for seven regular holidays. The board sustained the action of the carrier.—*Decision No. 546.*

Track Watchmen Should Be Paid a Monthly Basis

On the Lehigh & Susquehanna division of the Central of New Jersey, 74 men are employed as track watchmen and 6 are classified as tunnel watchmen, assigned to eight-hour shifts, paid a monthly rate of \$114.67 and allowed overtime for any service outside of the eight-hour tour of duty. On another division of the railroad these men are paid by the hour, the same as track walkers. The contention of the men was that they should be paid on an hourly basis, the same as on other divisions of the railroad, but the railroad contended that this work was of a special nature requiring the men to spend practically all of their time on inspection work and that under the provision of Section a-12, Article V of the agreement promulgated by the United States Railroad Administration, these men should be paid a monthly rate and that they are not track walkers in the ordinary sense of the term. The Labor Board sustained the railroad.—*Decision No. 589.*

THE CANADIAN PACIFIC, according to a statement attributed to an officer of the company, is going to establish through fortnightly passenger service between England and the Orient through Canada. The steamship agents report fairly heavy through bookings for this service already.

Foreign Railway News

Polish Railway Rates to Be Reduced

LONDON.

According to a Reuter dispatch, the Polish government has decided to reduce railway fares by 50 per cent.

Electrification of Greek Railways

LONDON

Approximately 300 miles of line are to be electrified in Greece, in which is included the railways of New Greece. This electrification it is estimated will represent a saving of about 3,000 tons of coal in about 15 to 20 years.

Head of Swiss Federal Railways Resigns

Hans Dinkelmann, for many years president and director general of the Swiss Federal Railways, has been elected director of the International Bureau of Railroads at Berne, Switzerland, succeeding the late Mr. Forrer. Mr. Dinkelmann has resigned from the service of the Swiss Federal Railways.

Proposed Electrification in Serbia

LONDON.

The Yugoslav government has submitted to the Parliament a proposal for the electrification of the Serbian railways. The length of line proposed to be electrified is 530 miles and will involve the construction of a number of hydro-electric stations. The £4,000 (\$19,464 at normal rate of exchange) granted to Serbia by the British government is to be used in railway construction.

Oil Fuel for Russian Locomotives

LONDON.

Reports from Moscow state that the Soviet government intends to import a large amount of corn and meat from Siberia during January, and has given instructions for the locomotives of the Zlatomst railway to be adapted for the consumption of oil fuel. The railway employees are promised special bonuses payable in money and bread if the task is carried out successfully.

Passenger Tickets Include Hotel Accommodations

LONDON.

The London, Brighton & South Coast railway, have arranged in conjunction with Thos. Cook & Son, tourist agents, to issue combined railway and hotel weekend tickets from London to Brighton and Eastbourne, seaside holiday resorts close to London. The tickets will provide for hotel accommodation and will be available from Friday or Saturday to the following Monday.

Exports of Locomotives in November

Sixty-one steam locomotives, valued at \$2,558,771, were exported in November, as compared with 92, valued at \$3,509,440 during October. Mexico continued as the largest purchaser, receiving 40 of the month's total. Detailed figures by countries, as compiled by the Bureau of Foreign and Domestic Commerce, follow:

| Countries | Number | Dollars |
|--------------------------|--------|-----------|
| Mexico | 40 | 1,756,270 |
| Cuba | 2 | 31,341 |
| Dominican Republic | 1 | 29,000 |
| Brazil | 1 | 23,500 |
| Chile | 10 | 360,000 |
| China | 3 | 300,000 |
| Philippine Islands | 4 | 58,660 |
| Total | 61 | 2,558,771 |

A Correction

In the item on the reorganization of the London & North Western and the Lancashire & Yorkshire, published in our last week's issue, it was incorrectly stated the reorganization was to take effect next year. Instead the changes have already been brought about. It should also be noted that

Ashton Davies is superintendent of the Northern division and L. W. Horne of the Southern, whereas the reverse was stated.

Exports of Car Wheels and Axles in November

Exports of car wheels and axles in November totaled \$60,625, as against \$142,895 during October. Detailed figures by countries as compiled by the Bureau of Foreign and Domestic Commerce, follow:

| Countries | Dollars |
|--------------------------|---------|
| Canada | 6,992 |
| Honduras | 192 |
| Mexico | 2,220 |
| Jamaica | 53 |
| Cuba | 1,987 |
| Dominican Republic | 246 |
| Brazil | 785 |
| Colombia | 291 |
| Ecuador | 460 |
| Venezuela | 160 |
| China | 37,200 |
| British India | 314 |
| Hongkong | 3,510 |
| Japan | 5,865 |
| Australia | 350 |
| Total | 60,625 |

New Line in Mexico

Construction of the Chihuahua & Orient Railroad will be started soon by William D. King, who recently obtained a concession from the Mexican Government for the project, according to reports from Candelaria, Mexico. It is explained that while the proposed railroad will be in the nature of a separate and private enterprise its primary object is to afford a transportation outlet for the ores of the mines of the Eripion Mining Company and that this corporation will finance the construction of the line. The proposed railroad will run from a point on the Juarez-Chihuahua division of the National Railways of Mexico, near Candelaria, to the Los Lamentos Mountains and thence to the Chocolate Mountains. According to the terms of the concession plans and specifications must be submitted for approval to the secretary of Public Works within 80 days from the date of signing the contract and active construction work must be started within sixty days after the plans and specifications have been approved.

Waste on Russian Railways

LONDON

According to recent advices, the Russian Commissary for Communication, Djerdjinsky, has handed to the Petrograd Soviet a report complaining of waste on the railways which states that 80 per cent more fuel is consumed than formerly. He further states that for economical reasons and because of the difficulty in procuring the necessary food, fuel, and so forth, the railway system of Russia is to be worked in three sections. The first will be the only one of the three to receive all its requirements from the state, this being because of its necessity in the transport of food and fuel. The second section will receive half its requirements from the state and the third will receive only 30 per cent, the balance in both the second and third sections being provided by the local population. Owing to the difficulty of fixing railway rates in consequence of the fluctuations in the value of the ruble, a proposal has been made that freight for the transport of goods should be paid in natura, the railways taking a percentage of the goods transported.

Repair of Italian Rolling Stock

LONDON

The locomotives owned by the Italian State Railways at the present time number 6,150, and all of them are badly in need of repairs, nothing having been done to them since before the war. In order to improve the condition of the rolling stock, the Italian State Railways Administration, has decided to give repairs to national and foreign firms in addition to the government repair shops. It is estimated that the present need requires that 120 to 125 locomotives be repaired monthly, whereas the government works are only able to repair 60 locomotives monthly and private works 15 monthly. With the increase in the number of repair shops, namely 17 as against 6 in the year 1920, it is expected that the required number will soon be reached. German and Austrian firms have received 450 locomotives for repairs. It is stated that

the cost of repairing locomotives in the government works is from 10 to 15 per cent lower than that of the private repair shops.

Italy has under construction three new types of locomotives, namely: (1) a four-axle, coupled locomotive for fast trains to be used on the lines of low gradients, (2) a five-axle, coupled locomotive for passenger trains, to be used on the mountain lines, and (3) a tank locomotive with four axles, coupled, for the lines of the Appennino.

Car Exports in November

In November, 11 passenger cars were exported from this country. None were exported in October. One hundred sixty-three freight cars were exported in November, valued at \$222,630, as against 83, valued at \$278,412 in October. Detailed figures by countries, as compiled by the Bureau of Foreign and Domestic Commerce, follow:

| Countries | Passenger | | Freight and other | | Parts of cars |
|------------------------------|-----------|----------|-------------------|-----------|---------------|
| | Number | | Number | | |
| Belgium | .. | .. | .. | .. | \$15,153 |
| Germany | .. | .. | .. | .. | 1,920 |
| Spain | .. | .. | .. | .. | 10,305 |
| England | .. | .. | .. | .. | 1,939 |
| Canada | .. | .. | 1 | \$220 | 163,105 |
| Costa Rica | .. | .. | .. | .. | 1,830 |
| Guatemala | .. | .. | .. | .. | 1,168 |
| Honduras | .. | .. | .. | .. | 5,571 |
| Panama | .. | .. | .. | .. | .. |
| Mexico | 9 | \$36,000 | 70 | 143,225 | 26,043 |
| Newfoundland, etc. | .. | .. | .. | .. | 442 |
| Jamaica | .. | .. | .. | .. | 1,502 |
| Trinidad and Tobago | .. | .. | .. | .. | 2,652 |
| Cuba | .. | .. | 50 | 50,000 | 18,079 |
| Dominican Republic | .. | .. | 30 | 14,050 | 1,877 |
| Argentina | .. | .. | .. | .. | 10 |
| Bolivia | .. | .. | .. | .. | 110 |
| Brazil | .. | .. | .. | .. | 17,086 |
| Chile | .. | .. | 12 | 15,135 | 4,872 |
| Colombia | .. | .. | .. | .. | 5,143 |
| Peru | 2 | 28,105 | .. | .. | 4,052 |
| China | .. | .. | .. | .. | 160,998 |
| Kwantung | .. | .. | .. | .. | .. |
| Chosen | .. | .. | .. | .. | 1,170 |
| British India | .. | .. | .. | .. | 7,877 |
| Other British East Indies .. | .. | .. | .. | .. | 33 |
| Japan | .. | .. | .. | .. | 45,071 |
| Australia | .. | .. | .. | .. | 13,175 |
| Philippine Islands | .. | .. | .. | .. | 8,669 |
| British West Africa | .. | .. | .. | .. | 330 |
| British South Africa | .. | .. | .. | .. | 37 |
| Total | 11 | \$64,105 | 163 | \$222,630 | \$520,219 |

British Owners of Interoceanic

(Mexico) Become Restive

The British owners of the Interoceanic Railway of Mexico are growing restive at the delay of the Mexican government in handing back their properties and in making compensation for using them. The properties have been operated by the National Railways of Mexico and during the past seven years the company has received no compensation.

The present administration in 1920 made the promise to meet its obligations. In the light of the promise the company is of the opinion that the government is unduly slow in making good. The chairman of the company likened President Obregon's plea that the properties should not be returned until they were restored physically to a tenant who wrote his landlord as follows:

"I am not sending you a check for the quarter's rent, as my children have done so much damage to the nursery that I am using the rent to carry out the necessary repairs."

At a meeting of the stockholders it was resolved:

"That the holders of debenture and capital stocks in the Interoceanic Railway of Mexico (Acapulco to Vera Cruz), Ltd., a British undertaking incorporated under the Companies Acts of Great Britain and the bulk of whose debenture and stocks and capital is held by British subjects, most indignantly and emphatically protest against the arbitrary action of the Mexican government in retaining the railways for upwards of seven years and in not returning them to the rightful owners, while neither paying over the compensation due to the company, as laid down by the Railway Law of Mexico, nor even remitting the net earnings of the company's lines."

A similar resolution was passed at a meeting of the stockholders of the Mexican Southern, a railway leased by the Interoceanic.

Track Material Exports in November

Track spikes, weighing 818,840 lb. and valued at \$23,385, were exported in November, as against 1,035,484, valued at \$41,780, in October. Exports of steel rails jumped from the October figure of 9,976 tons to 15,026 tons, valued at \$677,032, in November. Switches, frogs, splice bars, etc. exported were valued at \$333,495, as against \$194,855 in October. Detailed figures by countries, as compiled by the Bureau of Foreign and Domestic Commerce, follow:

| Countries | Railroad spikes, pounds | Rails of steel, tons | Switches, frogs, splice bars, etc. |
|--------------------|-------------------------|----------------------|------------------------------------|
| England | ..... | ..... | \$3,521 |
| Canada | 147,000 | 2,502 | 110,464 |
| Costa Rica | 7,000 | ..... | 2,044 |
| Honduras | 86,900 | 1,144 | 5,253 |
| Nicaragua | 600 | 3 | 4,655 |
| Panama | ..... | 15 | 1,407 |
| Salvador | 7,700 | 224 | 1,380 |
| Mexico | 34,573 | 978 | 23,196 |
| Cuba | 90,400 | 552 | 8,917 |
| Dutch West Indies | 2,497 | 25 | 48 |
| Dominican Republic | 9,834 | ..... | 2,896 |
| Argentina | ..... | 1,549 | 3,990 |
| Brazil | 5,760 | 98 | 16,663 |
| Chile | ..... | 164 | 74 |
| Colombia | 10,000 | 1 | 1,033 |
| Ecuador | ..... | 98 | ..... |
| Peru | 5,480 | ..... | 1,957 |
| Venezuela | 15,200 | 8 | 150 |
| China | 2,600 | 745 | 2,751 |
| Japan | 146,384 | 4,777 | 41,648 |
| Australia | ..... | 1,100 | 96,921 |
| Philippine Islands | 246,912 | 1,034 | 2,020 |
| Other countries | ..... | 9 | 2,507 |
| Total quantity | 818,840 | 15,026 | ..... |
| Total value | \$23,385 | \$677,032 | \$333,495 |

Exposure of Graft on Mexico's Railways Reported

Since Ramon P. de Negri became a member of the administrative staff of the National Railways of Mexico as the personal representative of President Alvaro Obregon nearly eight months ago a number of changes and reforms have been accomplished in the management of the government controlled property, according to advices from Mexico City. According to Mr. Negri's own statement one of the most difficult problems and abuses he has had to meet was the widespread system of graft that was in operation in every department of railroad service when he entered upon his new duties. He asserted in a recent statement that during the last ten months of the year 1921 the National Railways lost approximately \$300,000,000 by graft. This is exclusive of an enormous sum of money which was taken out of the pockets of shippers by the same system of graft. Such a strong hold had the practice of taking tribute from the railroad and shippers become that Mr. Negri found his efforts to eliminate this enormous leakage opposed at every turn. The fact, however, that he has plenary powers granted him by President Obregon enabled him to go to the heart of the abuses in many instances and as a result of his efforts much of the graft has been abolished.

It is stated that formerly commanding officers of the army in a number of cases exercised absolute jurisdiction over the movement of trains in their respective military zones. No shipments could be made without money tribute being first paid to them. In other instances government officials apportioned to their personal use a certain percentage of the freight and passenger receipts of the stations in the territory over which they exercised jurisdiction. So extensive was this practice of graft that in order to get a car of freight moved the shipper had first to pay the yardmaster, switchmen and engine crew a bonus; then when the car was finally attached to the train, the entire crew from the conductor to the brakeman had to be "sugared" in order to insure the movement of the car to destination. If this was not done the car would be set out on some remote siding and perhaps not heard of again for weeks or months.

Another phase of the many peculiar arrangements which he found was that of farming out railroad cars and engines to private corporations, especially large manufacturing and mining concerns. There were even private transportation companies organized for this purpose. Although the freight rate charged by these private transportation companies was 50 per cent higher than the regular rates many shippers found it to their advantage to patronize them because better and prompter service was obtained by that method than by the railroad itself. This novel method of handling shipments has been done away with.

Equipment and Supplies

Locomotives

The DONNER STEEL COMPANY, Buffalo, N. Y., is inquiring for 1, 0-6-0 type locomotive.

THE ERIE RAILROAD is having 5 Santa Fe type locomotives repaired at the shops of the Lima Locomotive Works.

THE DELAWARE, LACKAWANNA & WESTERN, reported in the *Railway Age* of December 10, as inquiring for 5 Pacific type locomotives has ordered this equipment from the American Locomotive Company.

THE CHICAGO, BURLINGTON & QUINCY, noted in the *Railway Age* of November 12 (page 959), as having authorized the purchase of 55 locomotives for heavy passenger and heavy and light freight service, is now inquiring for this equipment.

Freight Cars

THE NATIONAL RAILWAYS OF MEXICO have ordered 250 tank cars from the General American Tank Car Corporation.

THE UNITED FRUIT COMPANY, New York, is inquiring for 50 fruit cars of 30 tons capacity, for use on the Tela Railway.

THE CENTRAL OF GEORGIA is having a number of steel hopper cars repaired at the shops of the Chickasaw Shipbuilding Company.

THE NEW YORK, CHICAGO & ST. LOUIS has ordered 300 steel underframe stock cars from the Illinois Car & Manufacturing Company.

THE CHICAGO, BURLINGTON & QUINCY is expected to order the greater part of the freight cars which it has on inquiry about January 30.

THE ATLANTIC COAST LINE will build 50 box cars at its Waycross, Ga., shops and is inquiring for steel super structures and steel underframes for these cars.

THE GREAT NORTHERN, it is expected, will place contracts for refrigerator and passenger cars which it is inquiring for about February 15, while the date of ordering the other equipment on inquiry is indefinite.

Passenger Cars

THE BALTIMORE & OHIO is inquiring for 40 coaches, 2 dining cars, 3 combination baggage and mail and 5 mail cars.

THE ATCHISON, TOPEKA & SANTA FE, reported in the *Railway Age* of August 6 as inquiring for 10 dining cars, has ordered 8 dining cars from the Pullman Company.

THE CHICAGO & NORTH WESTERN has ordered 3 combination baggage and smoker cars and 3 chair cars from the American Car & Foundry Company. This order is in addition to the order for 44 cars noted in the *Railway Age* of January 21 (page 251) and makes a total of 50 passenger cars ordered by this road.

Iron and Steel

THE SOUTHERN is inquiring for prices on 26,600 tons of 85-lb. rail and 8,500 tons of 100-lb. rail.

THE FLORIDA EAST COAST has ordered 2,500 tons of rail from the Tennessee Coal, Iron & Railroad Company.

THE CAROLINA, CLINCHFIELD & OHIO has ordered 5,000 tons of rail from the Tennessee, Coal, Iron & Railroad Company.

THE MINARETS & WESTERN has ordered 10,000 tons of 60 and 75 lb. rail from the American representative of the Forges de la

Providence Marchienne-Au-Pont, Belgium. This company has also purchased 300 tons of structural steel for bridge work from the American Bridge Company.

Miscellaneous

The NORFOLK & WESTERN will receive bids until 12 o'clock noon February 8, at Roanoke, Va., for 2,100 lbs. of tie dating nails and 1,726,459 tie plates.

TAKATA & Co., New York City, has ordered from the United States Steel Products Company, 2,000 axles to be used on freight cars in Japan.

THE CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS is inquiring for approximately 5,000 bbl. of cement for the period from February 1, 1922, to April 1, bids to be submitted to W. J. Hiner, Cincinnati, Ohio, before 12 o'clock noon on February 1.

THE NEW YORK CENTRAL will receive bids until 12 o'clock noon February 3, for its requirements of track bolts, splice bars, frogs, switch points, track switches complete, offset splice bars, iron pipe farm gates, fence wire, crossing frogs, double curved frogs and railroad crossings.

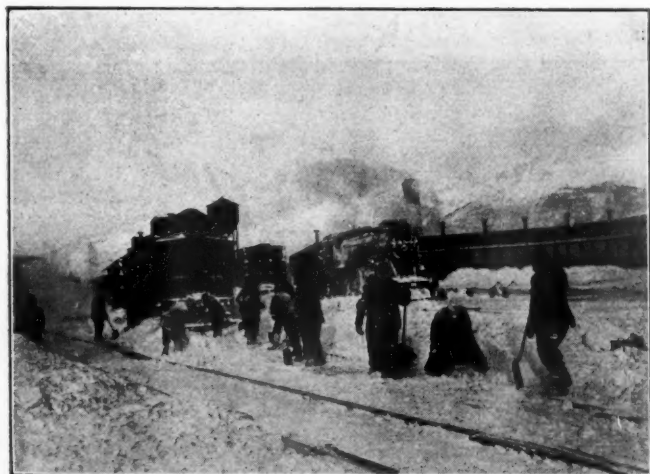
THE CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS is inquiring for 15 openhearth, rigid frogs; 14 openhearth, spring frogs; 2 manganese frogs, insert type, and 66 switch points. Bids are to be submitted to W. J. Hiner, Cincinnati, Ohio, before 12 o'clock noon on February 1.

THE NEW YORK CENTRAL will receive bids until 12 o'clock noon, February 8, for the requirements of the New York Central and subsidiary companies of track spikes and angle bars. Bids will also be received until 12 o'clock noon February 9, for the requirements of the same companies of steel wheels for locomotive, passenger car and tender repairs.

The NORFOLK & WESTERN will receive bids until 12 o'clock noon, February 1, at Roanoke, Va., for 1,100 bars of reinforcing steel, 120 billets of welding steel, 1,000 sheets of polished steel; requirements for one year of certain renewal parts for electrical equipment and certain electrical apparatus, and the like; repairs to electrical apparatus and repair parts for mechanical stoker; one 5,000 kva. transformer; 500 tons of steel rail and 150 steel tees.

Signaling

THE PHILADELPHIA & GARRETTSFORD STREET RAILWAY, Philadelphia, Pa., has let a contract to the Union Switch & Signal Company, Swissvale, Pa., for an electro pneumatic interlocking at the 59th street terminal, Philadelphia. This plant will have 21 switches and 22 signals.



Fighting the Snows in Canada

Supply Trade News

W. Rutherford, formerly managing director of Dick Kerr & Co., Ltd., and subsequently of the English Electric Co., Ltd., has been elected a director of G. D. Peters & Co., Ltd., London, Eng.

E. H. Dewson has retired as district engineer of the Westinghouse Air Brake Company, Wilmerding, Pa., in the Eastern territory with headquarters at New York City and will henceforth serve the company in a consulting or advisory capacity.



E. H. Dewson

J. C. McCune, assistant district engineer at New York, has been appointed district engineer to succeed Mr. Dewson. E. H. Dewson has been with the Westinghouse interests since 1901, when the old Standard Brake Company was acquired by Mr. Westinghouse and moved to Wilmerding, Pa., to be known as the Standard Traction Brake Company. Mr. Dewson had been chief engineer of the Standard Brake Company, a position which

he retained under the new management. Several years later the engineering departments of the several Westinghouse companies at Wilmerding were consolidated, the Standard Traction Brake Company changing to the Westinghouse Traction Brake Company and Mr. Dewson became assistant chief engineer of the united organization. When the district organizations of the Westinghouse Air Brake Company were created, Mr. Dewson was named resident engineer for the



J. C. McCune

Eastern district, embracing New England, New York, New Jersey, Eastern Pennsylvania, Maryland and Delaware. He has since remained in this position with headquarters in New York City. He has been closely identified with many important improvements in the air brake field during the last quarter of a century and is especially well known for his intimate knowledge of operating problems and traffic conditions in the city of New York. Mr. Dewson now resides at Quincy, Mass., where he plans to spend

most of his time while enjoying the greater leisure which his new position will afford. Joseph C. McCune, who succeeds Mr. Dewson as district engineer of the Eastern territory, is his former assistant. Mr. McCune received his early training under the late W. V. Turner, and has held positions of importance in the Westinghouse organization for a number of years. He joined the Westinghouse Air Brake Company after graduation from Cornell University in 1911. He served through the war as an officer of engineers, acting as an instructor in the Third Officers Training Camp at Camp Lee,

Va., and later saw service in France as a member of the Expeditionary Forces. He will maintain his present headquarters in New York City.

William J. Cleary has been appointed assistant general sales manager of the Sharon Pressed Steel Company, Sharon, Pa., effective February 1. Mr. Cleary's headquarters will be in the Dime Bank building, Detroit, Mich.

The **Dayton-Dowd Company**, Quincy, Ill., has opened a district office at Pittsburgh, Pa., at 809 Keenan building, in charge of T. J. Barry, who has been in the engineering and sales departments in the Quincy office for several years.

David A. Crawford, treasurer of the Haskell & Barker Car Company, who has been elected a vice-president of the Pullman Company, as was announced in the *Railway Age* of January 21, was born at St. Louis, Mo., on April 1, 1880. He was graduated from the University of Wisconsin in 1905, and for the following two years served as an instructor at the university. In 1907 he was appointed secretary to E. F. Carry, vice-president of the American Car & Foundry Company, and five years later was elected assistant secretary of the company. He was elected treasurer of the Haskell & Barker Car Company on January 13, 1916, which position he occupied at the time of his recent election, as above noted.



D. A. Crawford

Leroy Holt, assistant purchasing agent of the Tennessee Coal, Iron & Railroad Company and the Chickasaw Shipbuilding Company, Birmingham, Ala., has been appointed purchasing agent, succeeding **George Gray**, who has resigned, effective January 1, to become associated with the Wofford Oil Company.

The **Pressed Steel Car Company** and **Western Steel Car & Foundry Company** have discontinued their Washington, D. C., office effective February 1. **L. O. Cameron**, who has been a representative of these companies in the Southern territory for many years, has severed his connections with these companies, but will continue his office in the Munsey building to handle other accounts.

C. W. Johnson, formerly of the Chas. W. Johnson Lumber Company, Seattle, Wash., has been elected vice-president of

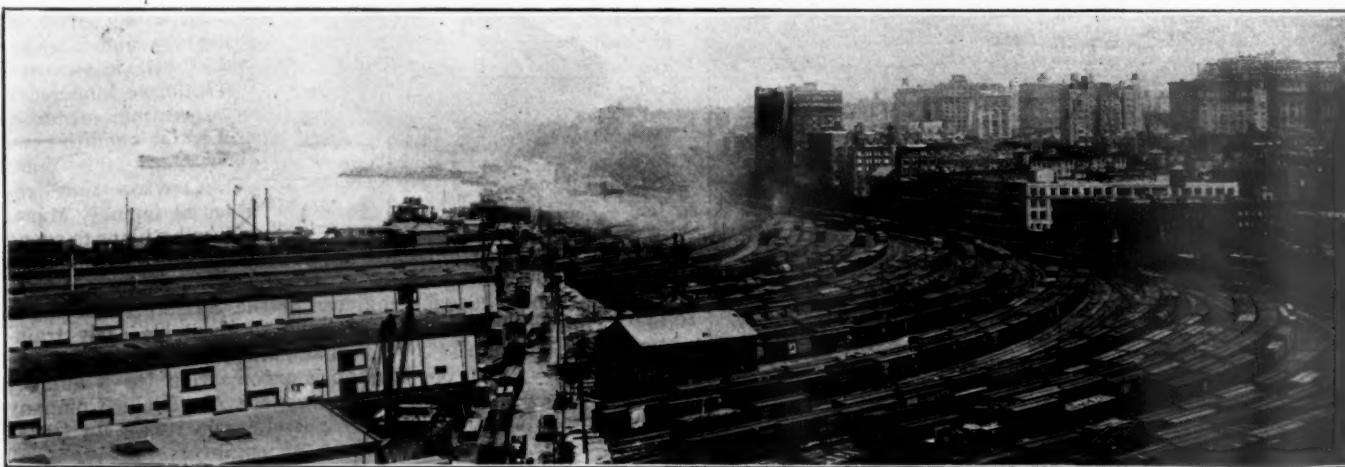
the **Duncan Lumber Company**, Portland, Ore., and will be in charge of general operations, effective February 1. **C. D. McCoy**, formerly sales manager of the company, has been elected a vice-president and will be in charge of the eastern sales of the company, with headquarters in the McCormick building, Chicago.

The **Combustion Engineering Corporation**, New York, has opened its own office in the First National Bank building, Pittsburgh, Pa., and will soon open an office in Cleveland, Ohio, both of which will be in charge of **W. C. Stripe**, former manager of the Philadelphia office, arrangements having been made between this corporation and the **George J. Hagan Company** of Pittsburgh, whereby the Hagan Company discontinues representation of the Combustion Engineering Corporation. The Hagan Company will retain the exclusive agency for the type H stoker, formerly known as the American stoker, for use in Hagan industrial furnaces.

Edwin F. Wendt, consulting engineer, has opened an office at room 513, Union Trust Co. Building, Washington, D. C., for the general practice of engineering in connection with valuation, financing, consolidation and regulation of railroads, telegraphs, water lines and other common carrier properties. Mr. Wendt was a member of the Engineering Board, Bureau of Valuation, Interstate Commerce Commission, in charge of the Eastern District from May 1, 1913 to October 31, 1921. This district included the states in New England and in addition, New York, New Jersey, Pennsylvania, Delaware, Maryland, the District of Columbia, West Virginia, Virginia and North Carolina. Mr. Wendt was graduated from Geneva College in 1888. After graduation he entered the service of the Pittsburgh & Lake Erie at Pittsburgh, Pa., and was, until he entered government service, engineer in charge, in various capacities, of construction and maintenance work. He was a member of the New York Central Lines' Engineering Committee from 1907 to 1913; a member of the commission to inspect the Government Railroad in Alaska in 1917, and president of the American Railway Engineering Association in 1913. He is a member of the American Society of Civil Engineers.

Trade Publications

CENTRIFUGAL PUMPS.—Much valuable data regarding centrifugal pumps is contained in Bulletin W605 published by the Worthington Pump & Machinery Corporation, New York. The bulletin is, in reality, a handbook for operating engineers. It covers thoroughly the question of installation, operation and maintenance of centrifugal pumps. One of the features of the book is a curve showing the maximum water temperature allowable for varying suction lifts which, it is stated, has never been printed before. Curves are also included to show the head-capacity and efficiency-capacity characteristics of centrifugal pumps. The concluding pages contain a large amount of valuable tabular matter to facilitate the solution of pumping problems.



The New York Central's 60th Street Yard, New York City

Railway Construction

ARIZONA EASTERN.—This company, in conjunction with the Atchison, Topeka & Santa Fe, will construct a union station at Phoenix, Ariz. Plans have been prepared and it is expected that bids will be requested as soon as several agreements between the companies have been settled.

ATCHISON, TOPEKA & SANTA FE.—This company will accept bids until February 1, for the rebuilding of a bridge across the Des Moines river at Dumas, Mo. The work is estimated to cost about \$80,000.

ATCHISON, TOPEKA & SANTA FE.—This company has awarded a contract to the Federal Engineering Company, Chicago, for the installation of oil-handling facilities, including a steel trough 380 ft. in length, a pump, and numerous pipe lines, at Argentine, Kan., estimated to cost \$18,000.

ATCHISON, TOPEKA & SANTA FE.—This company which was noted in the *Railway Age* of October 22, page 804, as contemplating extensions and improvements to its machine shops at San Bernardino, California, estimated to cost \$224,000 closed bids for the same on January 25.

CHICAGO GREAT WESTERN.—This company will receive bids until February 1, for the construction of a steel coaling station at Chicago.

FORT WORTH & DENVER CITY.—This company has awarded a contract to the Federal Engineering Company, Chicago, for the installation of a heating and plumbing system in its new hotel building at Texline, Tex., to cost \$15,000.

LEHIGH VALLEY.—This company has submitted preliminary plans to the Board of Utility Commissioners and to the city authorities proposing the elimination of two grade crossings at Perth Amboy, N. J.

LOUISIANA RAILWAY & NAVIGATION.—This company is preparing plans for the construction of a new station at New Orleans, La. The same company is also planning to take bids for the construction of a gravel washing plant estimated to cost about \$50,000.

MISSOURI PACIFIC.—This company which was noted in the *Railway Age* of December 31 (page 1333), as accepting bids until January 9, for the construction of a frame freight and passenger station at Zeigler, Ill., and the remodeling of a brick roundhouse at Coffeyville, Kans., has awarded a contract for this work to J. D. Fitzgibbon, St. Louis, Mo. The same company noted in the *Railway Age* of January 14 (page 207), as receiving bids until January 16, for the construction of a station at Nashville, Ark., estimated to cost \$12,000, also awarded the contract for this work to J. D. Fitzgibbon.

NORTHERN PACIFIC.—This company contemplates the removal of its tracks from the University of Minnesota campus and the construction of a bridge, 1,200 ft. in length, over the Mississippi river at Minneapolis, which projects are estimated to cost \$2,000,000, of which the state will contribute \$750,000. This road also plans the construction of a 300-ft. tunnel at Plateau, Mont., estimated to cost \$107,000; and the construction of a 60 ft. concrete subway under six tracks at Livingston, Mont., estimated to cost approximately \$100,000.

PHILADELPHIA & READING.—This company has awarded a contract to A. L. Carhart, Philadelphia for the erection of a 60 ft. span concrete arch to carry a highway over its Frackville branch at Mill Creek Jct., near Port Carbon, Pa.

TENNESSEE CENTRAL.—This company contemplates extending its lines from Hopkinsville, Kentucky, to Paducah, a distance of about 70 miles.

VIRGINIAN.—This company has awarded a contract to the Federal Engineering Company, Chicago, for the installation of a heating plant in its new roundhouse at Elmore, W. Va., to cost \$15,000.

Railway Financial News

BALTIMORE & OHIO.—*Income Account for 1921.*—The income statement for the 12 months to December 31, 1921, partly estimated, shows:

| | |
|--|--------------|
| Net railway operating income..... | \$22,440,294 |
| which is after charging approximately \$3,400,000 on account of lap-overs from the "guaranty period" which is reflected in credit to other income of like amount, making— | |
| Total of non-operating income..... | 9,136,221 |
| And total income (December partly estimated) .. | \$31,576,515 |
| a decrease of \$257,639, compared with previous year. | |
| From which are deducted—interest, rents, taxes and miscellaneous charges, aggregating..... | 25,546,971 |
| an increase of \$958,297. | |
| Leaving net corporate income of..... | \$6,029,544 |
| a decrease of \$1,215,936. | |
| Out of which have been declared semi-annual dividends at the rate of 2 per cent (4 per cent for the year) upon the preferred stock (paid September 1, 1921, and payable March 1, 1922) | 2,354,531 |
| Leaving surplus of approximately..... | \$3,675,013 |

GRAND TRUNK.—*Asks Bond Listing.*—This company has applied to the New York Stock Exchange for permission to list \$25,000,000 15-year 6 per cent sinking fund debenture bonds due September 1, 1936.

ILLINOIS CENTRAL.—*Director Resigns.*—J. Ogden Armour has resigned as a director in accordance with the Interstate Commerce Commission's order on interlocking directorships. He will remain a director of the Chicago, Milwaukee & St. Paul.

MISSOURI, KANSAS & TEXAS.—*Suit.*—Judge Walter H. Sanborn of the United States Circuit Court of Appeals of St. Louis, has granted The Central Trust Company of New York leave to file suit for foreclosure of a mortgage of \$3,254,000. The suit is the first of several similar ones to be filed under the reorganization plan to clear up titles to property of company under various mortgages. The petition states that the mortgage was issued November 1, 1894, and would mature in 1944. The railroad has defaulted payment of all interest since November 1, 1915.

NEW YORK CENTRAL.—*New Director.*—Warren S. Hayden, of Cleveland, has been elected a director to succeed Samuel Mather.

Special Meeting Postponed.—A special meeting of stockholders called for action on leasing the Toledo & Ohio Central has been adjourned to February 3.

PITTSBURGH & WEST VIRGINIA.—*Authorized to Acquire Control.*—The Interstate Commerce Commission has granted authority to this company to acquire control of the railroad of the West Side Belt through an agreement providing for the operation of the properties of both companies by the Pittsburgh & West Virginia. The Pittsburgh & West Virginia has also filed an application with the commission under Section 5 of the Interstate Commerce Law for authority to acquire control of the road by purchase of its corporate property, rights and credits, not including franchise. The application states that this does not involve a consolidation. The Interstate Commerce Commission recently denied a similar application on the ground that it had not been filed under Section 5.

RICHMOND TERMINAL.—*Asks Authority to Issue Bonds.*—This company and the Richmond, Fredericksburg & Potomac and Atlantic Coast Line have applied for authority for the issue by the Terminal Company of \$3,380,000 of first mortgage, 30-year 5 per cent gold bonds guaranteed by the Richmond, Fredericksburg & Potomac and the Atlantic Coast Line for funding the indebtedness incurred in connection with terminal facilities at Richmond. The bonds have been sold subject to the commission's approval to Kuhn, Loeb & Co., at 92.75.

TENNESSEE, ALABAMA & GEORGIA.—*Sale Postponed.*—The sale of this road has again been postponed until March 18. The original upset price of \$400,000 has been reduced by court order to \$200,000.

TENNESSEE CENTRAL.—Sale.—This road was sold at auction on January 10 to C. M. Hovey, assistant general manager of the Nashville Industrial Corporation for \$1,500,000.

The Tennessee Central operates 293 miles, its main line extending between Harriman, Tenn., and Hopkinsville, Ky., 247 miles. The road has been in the hands of receivers since January 1, 1913.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—Six Months Guaranty Determined.—The Interstate Commerce Commission has issued a certificate stating the final amount of the guaranty to this company and its subsidiaries for the six months period of 1920, amounting to \$1,693,960, of which \$287,960 is now payable.

TOLEDO, ST. LOUIS & WESTERN.—Proceeds of Settlement.—Edwin G. Merrill, chairman for the 4 per cent collateral trust bonds of 1917, series "A" has sent a letter to holders of certificates of deposit and to non-depositing holders announcing that the settlement of the litigation concerning the "Clover Leaf" 4s of 1917 has been approved and confirmed by the United States District Court. The proceeds of the settlement became available for distribution beginning January 20, 1922.

The New York Life Insurance & Trust Company has been appointed by the court and by the bondholders' committee as agent to carry out the distribution. Holders of certificates of deposit representing the 4 per cent bonds on surrender of their holdings, indorsed in blank to the insurance and trust company, will receive the following distributive shares with respect to each \$1,000 face amount of the bonds represented by the certificates surrendered:

- (1) \$152 in cash.
- (2) Certificates of deposit representing 1.8 shares of common stock.
- (3) Certificates of deposit representing 1.8 shares of preferred stock of Toledo, St. Louis & Western.
- (4) Certificates representing 12.5 shares of common stock of the Chicago & Alton.
- (5) Certificates representing 5.6 shares of the preferred stock of the Chicago & Alton.

Certificates will not be issued for fractional shares. In all cases where the aggregate face amount of bonds represented by the certificates of deposit surrendered by any one depositor is such that distribution upon the set ratio would result in the delivery of fractional shares the trust company will adjust such fractions.

WEST SIDE BELT.—Acquisition.—See Pittsburgh & West Virginia.

Additional Sales of Equipment Trust Certificates

January 20, 1922.

The director general of railroads has confirmed additional sales, at par plus accrued interest, of railroad equipment trust certificates held by the government, as follows:

To Robinson & Company, New York:
Toledo & Ohio Central Railroad, 1923-1935, inclusive..... \$1,882,400
To the Guaranty Trust Company of New York:
Southern Railway Company, 1923-1935, inclusive..... \$5,946,000

This latter sale comprises two-thirds of all the maturities of this equipment trust issue. The government will hold the balance of one-third of all maturities stamped as subordinated, in accordance with the agreement as amended. Other sales are under negotiation.

Railroad Administration Settlements

The United States Railroad Administration reports the following final settlements, and has paid out to the several roads the following amounts:

| | |
|---|--------------|
| Cincinnati, New Orleans & Texas Pacific Railway Co..... | \$525,000.00 |
| Delta Southern Railway..... | 60,000.00 |
| Houston & Brazos Valley Railway Company..... | 130,000.00 |
| St. Joseph Terminal Railroad Co. paid Director General..... | 3,000.00 |
| Short Lines..... | |
| Monson Railroad Company | 800.00 |

Dividends Declared

Cincinnati, New Orleans & Texas Pacific.—Preferred, 1½ per cent, quarterly, payable March 1 to holders of record February 18.
Baltimore & Ohio.—Preferred, 2 per cent, semi-annually, payable March 1 to holders of record February 8.
Delaware & Hudson.—2½ per cent, quarterly, payable March 20 to holders of record February 25.
Illinois Central.—1½ per cent, quarterly, payable March 1 to holders of record February 3.
Norfolk & Western.—Common, 1½ per cent, payable March 18 to holders of record February 28.
Pennsylvania Railroad.—1 per cent, quarterly, payable February 28 to holders of record February 1.
Reading Company.—First preferred, 1 per cent, quarterly, payable March 9 to holders of record February 17.

Railway Officers

Executive

G. B. Butts has been elected president of the Roby & Northern with headquarters at Roby, Texas.

H. W. Stanley, receiver of the Tennessee Central since 1917, with headquarters at Nashville, Tenn., has been elected president and **G. G. Morse** and **C. K. Boettcher** vice-presidents, with the same headquarters.

Financial, Legal and Accounting

Eugene Wright, general storekeeper of the Long Island, has been elected secretary, effective January 16, succeeding **Frank E. Haff**.

John E. Taylor, whose appointment as general attorney of the Kansas, Oklahoma & Gulf, with headquarters at Muskogee, Okla., was announced in the *Railway Age* of January 21 (page 255), was born at Foster, Ky., on February 21, 1879. He has been a practicing attorney in Missouri since May 7, 1900, and was associated with the law firm of Karnes, New & Krauthoff, and the successors to that firm, Miller, Comack, Winger & Reeder, with offices in Kansas City, Mo. Mr. Taylor has been connected with the legal affairs of the Kansas, Oklahoma & Gulf through association with Arthur Miller, member of the above mentioned firm and general counsel of that railroad. He was engaged in this work up to the time of his recent appointment.

Operating

James E. Bradford has been appointed assistant general manager of the Dansville & Mount Morris with headquarters at Dansville, N. Y.

J. C. McPherson, whose appointment as superintendent of the newly created East Bay Electric division of the Southern Pacific, with headquarters at Oakland, Cal., was announced in the *Railway Age* of January 14 (page 209), was born in Ireland. When 16 years old he came to America and shortly thereafter entered railroad service in a shop of the Atchison, Topeka & Santa Fe. Through various promotions he was successively advanced to the position of locomotive fireman, and later locomotive engineer. He came to California in 1895 to enter the service of the Los Angeles & Pasadena Interurban, the first unit of the present Pacific Electric system. He was successively



J. C. McPherson

dispatcher, chief dispatcher, trainmaster and assistant superintendent. He left in 1907, to accept the position of superintendent of the Los Angeles Interurban railway. Later when this company was absorbed by the Pacific Electric, Mr. McPherson was appointed superintendent of its Northern division. In 1913, he was appointed superintendent of the Southern Pacific's electric lines in Oakland, Alameda and Berkeley, or what now comprises the East Bay Electric division. During the recent war he served as a captain in the 66th engineers, and for a brief period before the armistice he was superintendent of terminals at the Vincennes docks,

with headquarters at Bordeaux, France. At the conclusion of his military service he re-entered the employ of the Pacific Electric as assistant general superintendent, with headquarters at Los Angeles, Cal., which position he was holding at the time of his recent appointment.

W. C. Higginbottom has been appointed superintendent of the Richmond division of the Pennsylvania, succeeding A. C. Watson, transferred.

P. W. S. Joy, trainmaster of the Southern Pacific, with headquarters at Sparks, Nev., has been transferred to Tracy, Cal., succeeding W. T. Small, who has taken service with another company. Mr. Joy will be succeeded by **B. S. Richart**, trainmaster at Carlin, Nev.

Traffic

H. P. Smith has been appointed commercial agent of the Seaboard Air Line with headquarters at Denver, Colo., effective January 20.

W. R. Canova has been appointed general agent of the Seaboard Air Line with headquarters at Tallahassee, Fla., effective February 1.

C. J. O'Neill has been appointed assistant freight claim agent of the San Antonio, Uvalde & Gulf, with headquarters at San Antonio, Tex.

Alexander M. Cleland, whose retirement as passenger traffic manager of the Northern Pacific, was announced in the *Railway Age* of January 21 (page 256), was born at Alliance,



A. M. Cleland

Ohio, on November 22, 1862. He entered railroad service in 1879 as a ticket seller on the Pennsylvania. From 1881 to August 1886, he was a ticket seller at the Union station, Chicago, and from that date to May, 1890, he was a ticket seller on the Chicago, Milwaukee & St. Paul, at Chicago. On the latter date he entered the service of the Northern Pacific as a ticket seller at St. Paul, Minn. On April 30, 1892, he was made a clerk in the passenger department at St. Paul, and in November, 1896, he was promoted to

chief clerk in that department. In February, 1901, he was made assistant general passenger agent, with headquarters at St. Paul, and on April 1, 1904, he was promoted to general passenger agent, with the same headquarters. He was promoted to passenger traffic manager, with the same headquarters, on May 1, 1919, which position he was holding at the time of his recent retirement.

Archibald Gray, whose appointment as assistant to the traffic manager of the Western Pacific, with headquarters at San Francisco, Cal., was announced in the *Railway Age* of January 14 (page 210), was born at Strachur, Scotland, on August 12, 1863. He entered railroad service on August 1, 1887, as a clerk in the local freight office of the St. Paul, Minneapolis & Manitoba (Great Northern) at Minneapolis, Minn. He was later promoted to chief clerk in that office, and in 1893, he was made chief clerk to the general traffic manager at St. Paul, Minn. From 1894 to 1896 he was assistant general freight agent, with headquarters at St. Paul. He was transferred to Butte, Mont. in June, 1896, and was promoted to assistant general freight and passenger agent on June 1, 1905, which position he held until October 1 of that year, when he was transferred to Sioux City, Iowa. From January 1, 1907, until April 1, 1911, he was assistant

general freight agent at Seattle, Wash., and from the latter date until October 16 of that year, he was assistant general freight and passenger agent, with headquarters at Portland, Ore. He left the service in October, 1911, to become general freight agent of the Western Pacific, with headquarters at San Francisco, Cal. He was appointed traffic agent, with the same headquarters on April 16, 1919, and again general freight agent at San Francisco on March 1, 1920, which position he was holding at the time of his recent promotion.

A. B. Chown whose appointment as assistant general passenger agent of the Grand Trunk Railway in Chicago was announced in the *Railway Age* of December 10, page 1178,



A. B. Chown

was born in Belleville, Ontario, in 1887. He was graduated from the public and high schools and took a course at the Ontario Business College in Belleville. He entered the service of the Grand Trunk at Belleville as a ticket clerk in 1907, in which capacity he remained until 1911 when he was promoted to soliciting passenger agent at Toronto. He was appointed traveling passenger agent in 1913 with headquarters in Pittsburgh. In June, 1918, he was transferred to New York. In December, 1918, he

was appointed acting general agent, passenger department. He was appointed general agent, passenger department in March, 1919, and in July, 1920, was appointed general agent, passenger department, of the Canadian National-Grand Trunk system, in which capacity he was serving at the time of his recent promotion.

Wilbur E. Coman, whose appointment as western traffic manager of the Northern Pacific, with headquarters at Seattle, Wash., was announced in the *Railway Age* of December 3 (page 1123),



W. E. Coman

was born at Portage, Wis., on May 15, 1872. He began railroad work in 1888 in the service of the Chicago, Burlington & Quincy. Later in the same year he was employed by the Kansas City, Springfield & Memphis, at Kansas City, Mo. He entered the service of the Union Pacific at Portland, Ore., in 1890 and he was appointed general agent of the Oregon-Washington Railroad & Navigation, with headquarters at Butte, Mont., in 1897. Later in that year he was appointed general

agent of the Oregon Short Line, with headquarters at Portland, which position he held until 1901, when he was transferred to Salt Lake City, Utah. He was appointed assistant general freight agent of the Oregon-Washington Railroad & Navigation, with headquarters at Portland, in 1902. He later became general freight and passenger agent of the Southern Pacific, with the same headquarters, which position he held until 1910, when he was appointed general freight and passenger agent of the Spokane, Portland & Seattle, with head-

quarters at Portland, soon after being promoted to traffic manager. From 1913 to 1919 he was vice-president and general manager of the Northwestern Electric, at Portland and from 1919 to the time of his recent appointment, he was connected with the Washington Water Power Company at Spokane, Wash.

James B. Duffy, assistant general passenger agent of the Atchison, Topeka & Santa Fe, Coast Lines, with headquarters at San Francisco, Cal., has been promoted to general



J. B. Duffy

passenger agent, with headquarters at Los Angeles, Cal., effective February 1, succeeding to the duties of **J. J. Byrne**, assistant passenger traffic manager, deceased. Mr. Duffy was born on January 3, 1875. He entered railroad service in 1890 as an assistant ticket agent on the Atchison, Topeka & Santa Fe at San Francisco. Two years later he was made a rate clerk, and in March, 1895, he was promoted to chief clerk in the general passenger traffic office at Prescott, Ariz. In January, 1896, he was

transferred to Albuquerque, N. M., and was later made passenger agent at San Jose, Cal., which position he held until July, 1900. From that date until the present, he has been successively station ticket agent, city passenger agent, general agent, and assistant general passenger agent at San Francisco, Cal., except for a brief period during federal control, when he was manager of the consolidated ticket office in that city.

E. S. Leavitt has been appointed general agent of the Southern Pacific, with headquarters at Boston, Mass., succeeding **James H. Glynn**, lately deceased.

E. E. Carter, superintendent of terminals of the St. Louis-San Francisco, with headquarters at Tulsa, Okla., has been appointed general agent, with the same headquarters.

W. G. Powell has been appointed freight traffic manager of the Dansville & Mount Morris, with headquarters at Dansville, N. Y., which position he will occupy in addition to that of general manager.

Engineering, Maintenance of Way and Signaling

W. L. Dayton, supervisor of signals of the Detroit division of the Grand Trunk, with headquarters at Durand, Mich., has been transferred to the Chicago division, with headquarters at Battle Creek, Mich., succeeding **H. E. Burns**, transferred. He will be succeeded at Durand by **J. P. Coleman**, formerly assistant supervisor of signals of the Chicago division, with headquarters at Battle Creek.

Henry D. Jouett, terminal engineer, Grand Central Terminal improvements, of the New York Central with headquarters at New York City, has been promoted to chief engineer of the Cleveland Union Terminals with headquarters at Cleveland, Ohio. Mr. Jouett was born at Summerville, Mass., on March 30, 1878, receiving his technical training at the Massachusetts Institute of Technology from which he was graduated in 1900. He entered railway service in June of the same year as a rodman in the division engineer's office at Albany, N. Y. One month later he was promoted to an inspector of erection of bridges, holding this position until in April, 1901, when he was promoted to assistant supervisor of track. In April, 1902, he was promoted to assistant in the division engineer's office at Albany, where he remained until August

when he left the employ of the railroad to go with a building contractor. Mr. Jouett re-entered the employ of the New York Central in February, 1903, in connection with the electrification work in the New York district and since that time has successively served as transitman, assistant engineer on construction, resident engineer, designing engineer on the electric zone improvements and later on the west side improvements in New York City, and terminal engineer, the position which he held at the time of his latest promotion.

W. H. Coverdale, recently appointed consulting engineer of the reorganized Chicago & Eastern Illinois, was born at Kingston, Canada, in 1871. He was graduated from Geneva



W. H. Coverdale

College, Beaver Falls, Pa., in 1891 with the degree of bachelor of arts, and received the degree of doctor of science in 1914. From 1892 to 1900 he was in the service of the Pennsylvania, Lines West, as rodman, instrumentman and assistant engineer, and during the last three years of that period was track elevation engineer in charge of the Pittsburgh, Fort Wayne & Chicago track elevation from 47th street to Park Manor, Chicago. From 1901 to 1903 Mr. Coverdale was employed as civil engineer by a New York

firm of engineers and contractors. Since 1904 he has practiced as a consulting engineer, specializing in railroad and industrial management and financing. In addition to his recent election as director and appointment as consulting engineer of Chicago & Eastern Illinois, Mr. Coverdale is chairman of the board of directors of the Pittsburgh & West Virginia, and of the Pittsburgh Terminal Railroad & Coal Company; he is president and director of the West Side Belt; director and consulting engineer of Gulf States Steel Company, and of the Gulf, Mobile & Northern; a director of the Meridian & Memphis; and ancillary receiver of the Connecticut Brass & Manufacturing Corporation.

Purchasing and Stores

E. Gardner Thorpe has been appointed general storekeeper of the Long Island, succeeding **Eugene Wright**, promoted.

G. W. Bichlemer, purchasing agent of the Union Pacific with headquarters at Omaha, Nebr., has been promoted to general purchasing agent with the same headquarters.

Miscellaneous

J. P. Burns has been appointed assistant chief of the department of investigation of the Canadian Pacific with headquarters at Winnipeg, succeeding **Wm. McLeod**, deceased.

A. H. Cadieux has been appointed assistant to the chief of the investigation department with headquarters at Montreal.

Obituary

T. J. Hudson, formerly general traffic manager of the Illinois Central, died on January 21, at St. Petersburg, Fla. Mr. Hudson retired from active railroad service in 1907.

THE INTERSTATE COMMERCE COMMISSION has issued orders authorizing common directors among the companies comprising the systems of the Philadelphia & Reading and the Boston & Maine.